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INNOVATIVE TRENDS IN WORLD TRADE DEVELOPMENT

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The monograph deals with a research of innovative trends in world trade in the context of globalization. It focuses on highlighting theoretical and methodological foundations needed to shape and develop innovative trends in international trade relations and exposes their implementation mechanisms at the national, regional and global levels. Significant attention is paid to an analysis of the ways to support innovations in the

world market infrastructure of goods, services, finance and labor, as well as to measures to implement innovative environmental standards in trade operations.

e monograph is intended for researchers, university students, innovation entrepreneurs and a wider audience interested in world trade development issues.

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FOREWORD

The rapid expansion of globalizing processes has become an essential feature of the contemporary human civilization development. Their intrinsic characteristics include an ever-growing versatility and permanent intensification that shape prerequisites for the development of comprehensive, although sometimes contradictory, global links between countries in all spheres of public life. The world economy is fully engaged in this process, as globalization of its structural elements and their mutual links launches the formation of various national and international political, economic, organizational, financial, scientific, technical, legal, social, and ecological institutional entities aimed at a balanced use of advantages provided by the global community's aggregate natural, production, and intellectual potential. A priority trend in their functioning represents the development of innovative sectors and businesses, in particular those intended to provide a basis for a differentiated transition of countries to the forthcoming stage of industrial evolution. Global commerce occupies a conspicuous place among principal forms and methods directly associated with searching and laying the routes for accelerated innovation development of national economies.

International trade relations have always been a core interest for academic research in economics, philosophy, sociology, law, and demography. It is caused primarily by their essential impact on the development of all domains of societal activity in those countries that maintain mutual commercial relations and participate actively, both as producers and as consumers, in shaping and evolving of new segments of the world markets for goods, services, capitals, labour, intellectual property, real estate, etc.

The role of world trade has recently consolidated substantially, especially with regard to its global innovation vector. The latter pushes export and import links of cooperating international business partners to

a qualitatively new level. This component of global commerce fosters economic stabilization and higher development rates of national economies, growth of their foreign trade turnover as well as diversification of its commodity, regional and institutional structure. The book attributes special significance to those innovative shifts that embrace all directions of world trade and mechanisms of their implementation.

The development of contemporary innovative directions of world trade has not yet received adequate scientific coverage. Given the exceptionally important role of the innovation component of foreign trade relations among nations for their economic growth and prompt use of the achievements of the revolution in science and technology, one cannot doubt in the scientific relevance of the issues investigated in this book.

The monography has a neatly balanced structure providing for a consistent consideration of innovation priorities of exporting enterprises throughout the world. It reveals with due argumentation the theoretical and methodological foundations of the evolution of innovative processes at both national and international levels; it identifies certain specific features in the use of new materials, machines, equipment, technologies, advertising methods, communication tools, management and marketing instruments in the sphere of international exchanges.

Important place in the monography belongs to the research of the role of labour resources and intellectual property in the qualitative innovative enhancement of foreign trade transactions of various countries, their financial support, the use of different instruments of free trade and neo-protectionist policies, and trends in the development of information and communication technologies.

An analysis of competitiveness of selected new goods and services traded at local markets also deserves attention of a reader. One can be also interested in getting acquainted with the presented well-argued analysis of innovative infrastructure of international trade flows, the ecology-related aspects of global trade and its logistics. One should not miss the chapters devoted to the research of specific sectoral characteristics of innovations in certain segments of world trade, in particular the problems of insurance, credit, and social impact.

This monographic research is strongly characterized by the engagement into the analysis of a vast massive of new factual material representing current trends in the development of Ukraine's foreign trade as well as specific features of innovative world trade relations.

Overall, the newly published inquiry into the innovative aspects of global trade development appears highly topical, muti-faceted and forward-looking. The book may serve as a contribution to a scientific background determining viable trends of optimization in the innovative development of world trade, and a promoter of further research in this direction. It makes an important contribution to the education and training process in the area of world economic development and international economic relations. However, it might be useful not only to experts but also to broader audience interested in contemporary global transformations.

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INTRODUCTION

One of the essential features of the modern stage of civilization development of mankind is the rapid expansion of innovations that cover all spheres of social activity – politics, economics, science, technology, communication, culture, etc. This tendency is clearly manifested in the process of functioning of the world economy, where the leading place is taken by the development of innovative directions of international trade.

First of all, it should be noted that international trade is one of the main areas of social production, where the innovative processes in the global economy have begun to be born and have been significantly developed. This was facilitated by the fact that international trade remains the main form of international economic relations. Objectively feeling the influence of globalization processes, it acquires new features that reveal its multifaceted capabilities as a significant factor in the stable functioning of national economies of the world community.

The main directions of innovative manifestation, which in modern conditions are inherent in the development of international trade, are as follows. First, recently there has been an increase in the impact of innovation on the scale of international trade. This is manifested in the growth of the volume of world foreign trade turnover, the constant innovation of diversification of goods, services implemented in the world market.

Secondly, the institutional structure of modern international trade is expanding rapidly, which promotes the spread of innovations in the global economy. Nowadays foreign trade actors are all countries of the world, integration associations, ministries, departments of individual states, transnational and multinational companies, enterprises and individuals, their various associations. On the other hand, the branch structure of international trade is expanding, which is oriented more and more on foreign trade relations of the newest branches and types of national production of the countries of the world.

Thirdly, there is a growing intensification of international trade, in particular, its innovative component. First of all, this is reflected in its dynamics. At present, the growth rate of export-import operations in most countries of the world community is constantly ahead, for

example, the growth rate of their industrial production. Another indicator of this trend in the development of international trade is the growing innovative share of foreign trade turnover in the gross domestic product of the world, in terms of per capita exports and imports in individual states, their integration associations, and regions.

Fourthly, the use of innovative goods and services deepens the link between international trade and the international division of labor. Modern foreign trade relations, as a rule, are stable, lasting. This, in fact, leads to an international specialization of production in countries that deliver products or provide services under contracts that are designed for a significant period of time. In addition, it should be noted an increase in new supplies of goods within the framework of agreements on international cooperation for the production of certain types of finished products. The latter, mainly, is based on the international partial, aggregate, technological specialization.

Fifthly, when characterizing the innovative aspect in international trade, it is necessary to highlight the priority issues of its global development. Here, first of all, it should be noted the movement in the world foreign trade turnover center of gravity in the field of international trade in services. Another promising direction of the development of international trade is the prevailing realization on the world market of goods that determine scientific and technological progress. This is a direct manifestation of the innovative direction of development of international trade. It envisages, first of all, the promotion of entrepreneurship, its international forms, which quickly and effectively use the advantages and the latest achievements, concentrating in the world of production and scientific and technical potential.

Sixthly, there is an innovative improvement of the mechanism of regulation of international trade relations. These include, in particular, the development of new forms, methods, tools, regulatory instruments for the implementation of international trade between the direct participants of foreign economic activity at the micro level, the relevant intergovernmental economic programs, agreements, and the specifics of the trade agreements operating in the areas of free trade, customs unions, and common markets. The World Trade Organization, the International Chamber of Commerce, the United Nations Conference on Trade and Development and other specialized

international organizations will play an important role in this direction of development of international trade.

Seventhly, in our time, an all-embracing innovation trend in the development of international trade is the rapid growth of the scale of e-commerce, modern information technology. First of all, it concerns the use of modern international payment systems in the export and import operations, raising the level of electronic-technological support for the activities of international commodity exchanges, auctions, tenders, intensive development of Internet commerce.

Eighthly, the leading global innovative manifestation of the development of international trade, there is no doubt that there is an increase in the level of ecologization of qualitative characteristics of goods and services that are implemented on the world market. It is the ecological parameters of such goods and services that serve as the basis for the development of innovative standards, whose control at the planetary, regional, integration, interstate levels are carried out by international trade organizations.

In general, the innovative pillar of the development of international trade in modern conditions is one of the most significant manifestations of the process of globalization of the world economy. This means that international trade, based on the deepened international division of labor, the achievements of the scientific and technological revolution, is objectively formed as a new commercial planetary network with signs of system education aimed at the rational use of natural, industrial, scientific and technical, labor and financial resources of the countries of the world community.

The proposed monograph explores the concepts of the formation and development of innovation in individual countries and, in general, in the global economy. As an integral part of the innovative development of the world economy, the strategic directions of foreign trade relations of the states of the world community are analyzed. Considerable attention is paid to the disclosure of the innovative orientation of international commodity flows, the latest forms of international trade in services, the role of financial mechanisms in the operational implementation of modern instruments for the implementation of export-import operations.

The research reveals the peculiarities of ecologization of the innovative sphere of world trade, modern trends in the development of cross-border trade, problems of achieving the world-class level of

innovation competitiveness of national export potential. An important place in the monograph is devoted to the analysis of the influence of innovative development of human capital on structural changes in world trade, the role of innovation infrastructure in elevating to a qualitatively higher level of trade relations between countries of the world, innovative directions of logistic support for the development of international trade relations, disclosure of strategic parameters of economic development of states the world community as a basis for their innovative growth. The monograph considers perspective directions of development of innovative technologies in the sphere of services, in particular, international tourism, hotel industry and in the direction of intensification of communication communications.

The monograph argues conclusions and perspectives of the introduction of innovations in foreign trade relations of countries of the world at the global, integration, regional and interstate levels. The results of the monograph expanded research into the scientific problem of the development of innovative trends in world trade in a globalizing environment.

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CHAPTER 1

GENESIS OF THE CONCEPTS OF INNOVATIVE DIRECTION OF ECONOMIC DEVELOPMENT

Anatoliy P. Rumiantsev

The evolution of human economic activity, along with other multifaceted factors, was conditioned by technological changes in the methods of production, which were determined by the corresponding transition to a qualitatively new level of development of productive forces in relation to the previous one. In our time, when the globalization processes intensively expand, innovative waves of economic development acquire a civilized scale and increasingly cover the states of the world and their mutual economic ties. In this context, the development of the world economy in the conditions of globalization is characterized by an orientation towards the unceasing implementation of the latest advances in scientific and technological progress. It is a non-alternative way of solving urgent economic, scientific and technical, social problems of development of countries of the world community. The expediency of applying such an approach to the definition of innovative prospects for economic development in the countries of the world is based on an analysis of the genesis of the relevant concepts of scholars that were formed in the process of economic science. The results of research of various scientific schools in the field of scientific and technical support for the development of our civilization are, of course, a significant theoretical asset, which predetermines the objective need for the innovative development of the world economy. In this context, it should be noted that modern innovation theory was formed as one of the theories of the economic cycle. It arose at the beginning of the XX century and it became widespread only after the Second World War. The theory of the interaction of productive forces and industrial relations, the impact of this interaction on superstructure processes on a historical scale is probably one of the first scientific attempts to trace the impact of scientific progress on the design of the economic mechanism [1, p.7]. At the present stage, this theory is in the stage of accumulation of relevant facts and events necessary for its further development and

substantiation. Therefore, now the question of the role of innovation in the economic system is one of the leading places in the research of domestic and foreign economists who consider scientific and technological progress as the main factor of socio-economic development.

The essential role of technological change in economic life was recognized by the classics of political economy (A. Smith, D. Ricardo). However, they believed that the increase in productive labor is a consequence of the process of division of labor, which, in turn, gives impetus to the invention of cars. They did not distinguish technological changes in a separate factor of production along with labor and capital [18]. K. Marx noted that innovation is a factor that opposes the pressure of the market on the manufacturer, contributes to reducing production costs, and solves the problem of limited resources [2, p.18].

During the first half of the twentieth century the attention of economists focused on the analysis of the conditions of the long-term equilibrium of the economic system, the interests of researchers overcome the problems of technological transformation. Representatives of the neoclassical school considered the technology factor as a task. Proponents of the Keynesian theory, analyzing processes in the short run at a fixed price level, did not properly investigate technological changes and also left them in a position "for other equal conditions" [3, p.45-46].

The well-known Ukrainian scientist Tugan-Baranovsky is also involved in the formation of an innovative theory of economic development. In his work "Industrial crises in modern England, their causes and influence on people's lives" (1894), he analyzed the existing theories of markets and crises, various approaches to explain the cyclical nature of economic development. M. Tugan-Baranovsky, based on the concept, put the idea of the connection of industrial fluctuations with a periodic growth of fixed capital. The scientist proved that the main obstacle to the sustainable development of production, above all, is the internal properties of the economic system, which are determined by the cyclic regularity of the reproduction of fixed capital [1, p. 53-54]. M. Tugan-Baranovsky showed that the laws of investing determine the phases of the industrial cycle, and the regulation of investments and the correct allocation of them create the possibility of a constant expansion of capitalist production. E. Hansen, who considers technical progress as

the driving force and the root cause of production, calls this work M. Tugan-Baranovsky a milestone in the development of economic analysis, a source of a new course of economic thought. [4, p.114]

The theory of Tugan-Baranovsky was developed by progressive scientists from developed countries - Spiethoff, Schumpeter, Perlucky, Twiss, Hartman, Freeman, Solow, Mensh, Soti, and others. Arthur Spiethoff supplemented the theory of the M. Tugan-Baranovsky concept of the mechanism of "absorbing" the investment vacuum created as a result of technical inventions and the discovery of new theories. The fall in the effective demand for innovation can cause the end of the phase of rising. Thus, the capacity of demand for capital goods is determined by the state of scientific and technological progress [3, p. 132].

The Austrian economist Joseph Schumpeter (1883-1950), the central figure among the founders of innovative theories of economic development, formulated a holistic innovation theory that became the "grandfather" of the innovative concepts developed later by Western economists. In 1912 Schumpeter publishes the work Theory of Economic Development, which considers innovation as an economic tool, used by the "hero-entrepreneur" in order to get higher profits [5, 32]. Subsequently, he expanded this theory, providing a special place in the development of economic science. It was he who was able to generalize theoretical studies that deduced economic dynamics directly from the processes of creation and introduction into the industrial production of new technologies and goods. The concept of "innovation" developed by Schumpeter occupied a special place in the world economic theory. Today, this term is a generally accepted category in economic literature.

The theoretical developments of Schumpeter are the basis of almost all existing innovative concepts. Innovation as an economic category is not just a concept, which means any innovation, but a new function of production. This is a change in production technology, which is historically important and necessary. Innovation is a leap from the old production function to the new, but not every innovation, new production is innovation. It was Schumpeter who made the classification of innovations according to the criterion of novelty, investigated the possibility of implementing innovations, formulated the idea of "efficiency of competition", depicting a market mechanism as

an effective interaction of monopolistic forces and competition, based on innovations. In accordance with the theory of the dynamic development of capitalism, Schumpeter explained the fluctuations of the economic situation by the discontinuity of the flow of innovations caused by fluctuations in investment. At the same time, the cyclicality of economic development was considered by them as regularity. The conclusion of the analysis of the stages of scientific and technological progress was Schumpeter's statement that technological innovations are the cause of fluctuations in economic activity.

The categories "innovation", "innovation process" Schumpeter successfully combined with the theory of long-term cyclical oscillations, known as *Kondratiev* waves (long wave theory). Kondratiev in the 20's of the 20th century analyzed statistics from four leading capitalist countries: Britain, France, Germany, and the USA. The dynamics of interest on capital, prices, a volume of foreign trade, wages, as well as a production of the main types of industrial products was investigated. The conducted studies have revealed the presence of cyclic waves of duration 48-55 years. The analysis was carried out according to data covering the period of 140 years [6].

According to M.D. Kondratiev, periods of great cycles from the end of the XVIII century the following was found:

I
- Growing wave: from the end of the 80's of the eighteenth century till 1810 - 1817
- The falling wave: from 1810 - 1817 to 1844 - 1851

II
- Growing wave: from 1844 - 1851 to 1870 - 1875
- The falling wave: from 1870 - 1875 to 1890 - 1896

III
- Growing wave: from 1890 - 1896 to 1914 – 1920
- Probable downward wave: from 1914-1920

M. D. Kondratiev discovered empirical laws that accompanied the prolonged fluctuations of economic conditions. He noticed that "long

waves" do not arise from the effects of economic development factors, which were considered the main ones at that time. M.D. Kondratiev drew attention to the fact that for about two decades preceding the rise of the wave of a long cycle, there is a revival in the field of technical inventions, and the beginning of the rise coincides with the widespread use of inventions in the industry. It is innovation that transforms the economic situation from the rising trend, causing wave formation. In the development of the first growing wave (the end of the eighteenth century), inventions in the textile industry and the production of the pig iron played a decisive role. The growth in the second wave (mid-XIX century) was conditioned, first of all, by the development of maritime transport and the construction of railways. The third growing wave (the end of the XIX-early XX centuries) was associated with the massive introduction of electricity, the radio and other innovations, inventions in the field of electronics [3, p. 150].

Table 1.1

The development of technological developments after the Second World War

Technological processes	Characteristics of technological processes
First technological way (1780-1851)	Based on new technologies in the textile industry, the use of water energy.
Second technological way (1844-1896)	Related to the development of rail transport and mechanical production in all fields based on the steam engine.
Third technological process (1890-1920)	Production of electric power, steel, coal, heavy machinery and inorganic chemistry.
Fourth technological way (1918-1960)	Automotive industry, non-ferrous metallurgy, durables production, synthetic materials
Fifth technological way (1955- 1983)	Development of computer technology, modern types of weapons, software, aviation industry, telecommunications, robot-building.
Sixth technological technique (1980-present time)	Key factor of the layout - microelectronic components, biotechnology, nanotechnology, information sphere and communication.

Source: [10].

Long wave theory has been reflected in contemporary experts in economic theory, which supplemented it with three other innovative waves and thus substantiated the concept of technological methods in economic theory. So today, besides the three "technological waves" of Kondratiev, there are six technological ways that differ slightly in their chronology, elements, and factors from the previous theory (Table 1.1).

The revival of attention to the innovation factor in economic theory comes in the second half of the 1950s. During the first half of the century, the theoretical concept of Schumpeter was only formed and was not recognized in the economic environment. [7, p. 87-88]

The period after the Second World War was the time of the scientific and technological revolution and its enormous impact on economic development. In the late 50's of the twentieth century in researches of scientists R. Solow [8], Moses Abramovitz [9] showed the exceptional economic impact of technological changes.

Thus, an important step forward was made, on the one hand, in the field of technological change, and, on the other hand, in the field of economic growth, in the sense of the existence of interdependence between these processes.

Studies of long-term changes in the US economy, conducted by scientists Abramovitz, Denison, Kendrick showed that the gross national product of the United States is growing faster than the increase in the amount of labor and capital employed. Thus, it was assumed that the additional rate of growth is due precisely to scientific and technological progress [11, p.3-17]. This hypothesis was confirmed by R. Solow in the work "Technical Change and the Aggregate Production Function" (1957), for which in 1987 the scientist received the Nobel Prize. Solow calculated that the double increase in gross product per one spent man-hour in the USA in the period 1909-1949 occurred at 12.5% due to the growth of capital-labor and 87.5% due to technological transformation [8].

During the 60's and 70's research on the phenomenon of innovation as a leading factor in economic growth was conducted.

A well-known researcher on the problem of economic growth, the Nobel Prize laureate Simon Smith Kuznets called the period of the scientific and technological revolution as a separate economic epoch when many stable ideas about the character of the functioning of

the economic system have changed and outlined six of its characteristic features:

1) Significant acceleration of per capita production growth relative to previous periods, especially in developed countries;

2) A significant acceleration of productivity growth as a living labor, and all factors of production;

3) Rapid structural changes in favor of the non-agricultural sector, and in developed countries - the redistribution of activities from industry to the service sector;

4) Rapid pace of modernization of life;

5) Development of processes of international integration of national economies. The article of export becomes comparable with the main proportions of the gross output;

6) The gap between income levels between rich and poor countries is wider than it was. This is due to the relatively lower rates of technology and economic growth in developing countries [12].

During the world scientific and technological revolution, following the Marxist concept of scientific and technological progress and paying tribute to its significance for the development of productive forces, attention was also paid to the development of science and technology in the USSR. But technological changes are understood as a separate factor from production. Therefore, it is not surprising that the fundamental four-volume "Economic Encyclopedia. Political economy" (1980) articles on the research of J. Schumpeter, M. Kondratiev, R. Solow, are absent in general [13]. However, it should be noted that significant contribution to the development of innovation Soviet scientist, Nobel Prize laureate L. Kantorovich, who calculated that each ruble, invested in the development of technology, gives 3-4 rubles increase in national income [7, p.103-106]. In general, the innovation process in the USSR was accompanied by a large over-utilization of resources and did not accelerate the growth of the welfare of the population.

The current level of development of the problem and its urgency require further research, for which it becomes of special importance to study the main categories that characterize innovation processes.

These categories include the concept of "innovation" means the complex process of creating, distributing and using innovations that promote the development and increase of the efficiency of enterprises, as well as meet certain needs [14].

The term "innovation" has become actively used in the transition economy of Ukraine both independently and for a number of related concepts: "innovation activity", "innovation process", "innovative decision", etc. In the world economic literature, "innovation" is interpreted as "... transforming potential scientific and technological progress into real, embodied in new products and technologies and characterized by a higher technological level, new consumer qualities of goods compared with the previous product" [1, p.31].

The term "innovation" is also used to refer to the process of introducing inventions into production. In this regard, Schumpeter distinguished between the concept of "invention", "research and development" and "innovation" [5]. Inventions are ideas that are useful for business use but not necessarily really implemented there. Research and development - is a scientific and technical activity, carried out both in production and in state and public institutions. Innovation is the commercial introduction of new products or new means of production.

The basic definition of innovation was given by Schumpeter in his book "The Theory of Economic Development" (1912), where this term was called "a new combination", which means a different quality of means of production, which is achieved not by means of minor improvements in old equipment or an existing organizational scheme, and discretely, next to them, through the introduction of new means of production or systems of its organization. This definition has become classic. Innovation is not just innovation, but a new function of production. [15]

According to international standards, innovation is defined as the final result of innovation, which has been implemented as a new or improved product introduced in the market, a new or improved technological process used in practical activities, or in a new approach to social services [16, 17]. Scientific and technical developments and innovations serve as an intermediate result of the scientific-production cycle and as the practical application becomes a scientific and technological innovation, the final result. Scientific and technical developments and inventions are an appendix of new knowledge for the purpose of its practical application, and scientific and technical innovations are the materialization of new ideas and knowledge, discoveries, inventions and scientific and technical developments in

the process of production with the aim of their commercial realization to meet the needs of consumers. Indispensable properties of innovation are the scientific and technical novelty and industrial suitability. Commercial realization in terms of innovation serves as a potential feature, which requires some effort to achieve.

The Organization for Economic Cooperation and Development (OECD) defines the concept of innovation as follows: "Innovation is a new application of scientific and technical knowledge that leads to market success". The Canadian Statistical Office sees innovation as "transforming an idea into a new or improved product or business process that is in demand on the market". American experts hold a similar point of view on the definition of innovations: "Innovation is the essence of innovation. Innovation is a set of technical, industrial and commercial measures that lead to the emergence of new and improved products on the market and the commercial use of new and improved production processes and equipment".

F. Haberland, a German specialist, believes that "innovation encompasses the scientific, technological, technological, economic and organizational changes that are occurring in the process of reproduction. Its main characteristics are qualitative novelty of products, means of production and technology in comparison with the previous, the dynamics of the cycle of innovation, economic efficiency, social consequences" [18]. B. Twiss defines innovation as a process in which an invention or idea acquires economic content [19, 20]. F. Nixon believes that innovation is a set of technical, industrial and commercial measures that lead to the emergence of new and improved industrial processes and equipment on the market [21]. According to B. Santo, innovation is a socio-technical and economic process, which, through the practical use of ideas and inventions, leads to the creation of the best in their properties of products, technologies, and in the event that innovation is oriented towards economic benefit, profit, its appearance on the market can bring additional profit [22].

M. Porter believes that innovation is an opportunity to gain competitive advantages. Innovations are reflected in the new design of the product, in the new production process, in the new approach to marketing, in the new method of training employees [23]. K. Freeman calls innovation technical, design, production, management, manufacturing new products, the first commercial use of new processes

or equipment [24, 25]. C. Knight considers innovation as "the introduction of something new about the organization or its immediate environment", and evaluates the innovation "as a special case of the process of change in an organization" [26]. E. Mansfield says: "When the invention begins to apply, it becomes a scientific and technological innovation" [27]. P. Leon gives a clearer delineation of these concepts: innovation is a "new kind of product, method, technology".

According to S. Valdaytsev, innovation is the development of a new product line (that is, a set of contracts for product sales and supply of purchased resources, as well as the necessary tangible and intangible assets), based on specially designed original technology that can bring the product to market, which satisfies the needs not provided by the existing proposal. The new technology can also make it more accessible to consumers than the product known to them [28]. D. M. Chervanov and L. I. Neykova determine innovation as a process of bringing a scientific idea or technical invention into a stage of practical use, which brings revenue [29]. L. L. Antonyuk, V. S. Savchuk, A. M. Poruchnyk in their monograph treats innovation as a new phenomenon, innovation or any change introduced by the business entity in its own activities in order to increase its competitiveness, both in the domestic and foreign markets [30].

According to the Law of Ukraine "On Innovation Activity", innovations are newly created or improved competitive technologies, products, services, organizational and technical solutions of a production, administrative or other nature that significantly improve the quality of production or the social sphere.

Each new product (product) can be considered either in terms of its availability of new technical solutions, their significance, or - the availability of market novelty. Under the market's novelty of a product, it means its ability to satisfy a completely new demand of customers, or to bring to a new level the satisfaction of a known need, or significantly expand the range of consumers who are able to purchase goods that satisfy the already reached level of the known need. As the widespread experience of recent years shows, a product with market novelty yields an average 28% higher profit than the traditional one [31]. The product may contain many technical innovations and at the same time have no market novelty. The more significant innovation, the

less important are market factors for its appearance. However, the more radical the innovation is the higher the risk of a commercial failure. Each innovation can be considered as "violations" of a well-established, tested and current system of production, which has justified itself, and sales of products or organization management of the enterprise. A new product or process is in principle questioning all the old ones.

To determine innovation, the benchmark may be, for example, a sharp change in productivity, product quality, the emergence of a new product, etc. In this case, the rate of change is decisive. A sharp jump instead of a progressive advance highlights innovation itself. Not always, the process of creating, for example, new technology or technology is innovative. The fact that innovation really is such is confirmed only afterward, when a new idea has developed inside and out in the economy and has received general recognition. For an individual company, innovations do not necessarily imply that business lines and their elements (new products, processes, channels of supply and sale) that are mastered by the enterprise are a pioneer, that is, new to the market (consumers) and/or industry. Under innovation can understand the perception of the product and technology already created and mastered by domestic or foreign pioneering innovators. Access to pioneering innovations is ensured through the acquisition of licenses for inventions (licenses for know-how, patent licenses), the placement of subcontractors for the development of innovations and engineering (with the simultaneous creation of new production facilities), the purchase of special technological equipment, as well as in other more indirect forms (for example, an invitation to work for the relevant know-how carriers).

In practice, the terms "newness", "novelty", "innovation" are often identified, although there are some differences between them. Therefore, I consider it appropriate to delineate these concepts. In my opinion, the newness may be a new order, a new method, and an invention. Novelty means that the novelty is being used. From the moment of acceptance to distribution, the newness acquires a new quality and becomes an innovation.

In addition to legal means of simulating technologies and products that have been recognized in the market, there is, of course, also the so-called "innovative piracy" (illegal imitation of relevant innovations). There are also semi-legal methods for obtaining access to

the technologies on which the innovation business can be based (for example, "re-engineering" for the purpose of obtaining "parallel" patents with a substantially different formula of the invention compared with the invention in which the enterprise is interested. However, on the basis of openness illegal and semi-legal imitation, it is usually difficult to deploy a significant volume of innovative business (it discourages prosecution by market controllers of the patent holders, a loss of time to master the product Already gaining obsolescence, etc).

The analysis of various definitions and views on the concept of innovation leads to the conclusion that the specific content of innovation is a change and the main function of innovation is the function of change. It is characteristic of large-scale innovations that already at the stage of innovation; they stimulate the emergence of other, repeated innovations, necessary for their implementation.

An essential theoretical and methodological aspect of the study of the innovative stage of the evolution of the world economy is the definition and analysis of factors and conditions that ensure the implementation of this process. Most countries use innovation in their economic development. According to existing data, in the structure of innovations in developed countries, almost 60% make such innovations that have a breakthrough value or relate to major technological advances. The share of innovation related only to the improvement of traditional technological processes in these countries tends to decrease, and in the most innovative countries, it does not exceed 10-12% [32].

An important feature of the innovation-oriented economy is the steady growth of the share of the science-intensive sector of production, in particular in value added and employment. This sector in the manufacturing industry in developed countries is an average of 35-40% in value added and in employment. The share of high-tech products in the total output is roughly the same. [33]

The active introduction of innovations in the economy is accompanied by a decrease in material and energy intensity of production, an increase in labor productivity and, accordingly, an increase in the competitiveness of the country. For example, over the past 40 years, the GDP of fifteen countries in the European Union has increased by more than 5 times, while employment in these

countries has increased by only 20% while working hours have even dropped by 18-25%.

Research of recent years has shown that the innovative model of the economy is complex. It consists of many elements that are dynamically interconnected. The main elements of the innovation model are:

- A system of production of scientific knowledge and innovations;
- Education and advanced training system;
- A system of commercialization of scientific knowledge and innovations;
- The system of using innovations;
- A system of management and regulation of innovative economic development.

Each of these systems plays a role in the functioning of the innovation model, without any of them it is impossible to achieve positive results. However, the system of management and regulation of innovation development, both at the state and sectoral, regional levels, as well as directly at the level of enterprises and organizations, acquires special significance. In particular, the opportunities and pace of development of all other components of a model depend on state policy. Moreover, for an innovation model, the reorientation of state influence from direct interference into economic processes is characterized by the transition to more effective methods of indirect influence: a creation of conditions for the growth of market demand for innovation; promoting the development of a competitive environment; providing priority support to the development of science and education; provision of intellectual property protection; ensuring the improvement of the quality of the workforce and the prevailing dynamics of the growth of its value, etc.

Thus, the innovation-oriented economy is determined by a number of specific rice for it, in particular:

- A well-defined orientation of the reproductive process to achieve high technological competitiveness of the country at the expense of scientific knowledge, technologies, and information;
- Availability of social and economic infrastructure corresponding to the task of increasing technological competitiveness to the level of the most developed countries of the world;

- The availability of technology and production potential - material and human resources capable of ensuring the production of competitive high-tech products;
- Compared to the traditional economy, significantly higher indicators of economic efficiency of production, which more than half are achieved through innovative factors.

The innovative-oriented economy also requires specific approaches, different from the traditional economy, to the definition and implementation of state policy. These features in a generalized form are reduced to the following:

1) Policy orientation to ensure the parity of the efforts of the state and the market for maximizing the results of knowledge;

2) The unification of socio-political, scientific, educational, economic, ecological and other interests of the society around the national idea - the revival of Ukraine;

3) Creating conditions for the development of private investment, saving resources and funds, increasing production on an innovative basis;

4) Improvement of the taxation system by gradually reducing tax rates on savings and investments and increasing on consumption;

5) Expansion of its stimulating role for the innovative development of the economy;

6) Creation of a modern infrastructure of innovation sphere, provision of state responsibility for personnel training for the needs of the innovative economy;

7) Effective structural restructuring of the economy by increasing the share of highly technological branches as a result of innovation processes;

8) Orientation of the state policy, mainly on economic growth and increase at the expense of this quality of life of citizens, their social protection, instead of combating poverty, the unjustified establishment of the system of social privileges, which is most characteristic of the state policy of countries with a low level of innovative development of the economy [34, p.62-65].

Countries that understand in a timely manner what innovation is, innovation is one of the main factors of sustainable development, will definitely achieve an "economic miracle". For the Ukrainian economy,

the most revealing moments of active innovation transformation observed in such countries as Japan, the USA, South Korea, China, etc.

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CHAPTER 2

THEORETICAL BASIS OF WORLD TRADE MARKETING ASPECTS DEVELOPMENT IN THE INNOVATION SPHERE IN THE CONDITIONS OF GLOBALIZATION

Yuliya O. Kovalenko

The current stage of the functioning of the world economy is characterized by close interconnection, an interconnection of all spheres of economic life in the world, both within the framework of a separate society and on a planetary scale. This has an impact on the development of marketing aspects of world trade in the innovation field. First of all, it is about their influence on economic, financial, industrial, investment, innovative components of trade relations in the innovation sphere. Its development, in turn, is under the influence of scientific and technological and the technological progress, which is characterized, in particular, by the intensification of innovation activity and the need to find directions for its improvement. Countries of the world economic complex are characterized by innovation parameters, methods of management at the macro and micro levels. In developed countries, the prevailing share of GNP growth is due to the use of innovations, and for the developing countries, activation of innovation processes is the basis for increasing competitiveness in the world market.

In view of the above, it should be noted that the formation of marketing tools for world trade in the innovation sphere is carried out on the international, supranational and national levels. Their choice is based on the results of a comprehensive assessment of both the environment in which they operate the countries of the world and on determining their internal innovative capabilities, which are characterized by the state and level of use of innovative potential. Experience of developed countries shows that innovation and marketing parameters of the global economy are determined, first of all, by the scale and quality of the introduction of new ideas, technologies, management systems, products that result from the mutual development of science, innovation and its marketing component.

At the macro level, the leading role in the development of innovation-marketing models of management belongs to the state, its

ability to support innovations in various spheres of the economy, to promote the functioning and promotion of the main segments of the innovation market. Its effective development depends, first of all, on the development of infrastructure; the activity of developers of innovations, conformity of level of innovative developments to world standards. The combination of these factors makes it possible to determine the extent to which the activity of the innovation activity of the country on the given market is sufficient to ensure its effective development and realization of economic interests. In addition, it is these factors that determine the scale, dynamics and other quantitative and qualitative characteristics of the innovation potential, which can be considered as one of the important parameters of the innovation process [1].

At the level of individual enterprises, the use of innovative advantages is carried out through the expansion of offerings of services that have innovative features, the development of competitive relations, the search for high-tech solutions, the application of the latest methods and tools in optimizing marketing, production, labor, financial resources. Modern enterprises, operating in a complex socio-economic environment, must constantly create and implement various types of innovations that ensure their effective operation on the world market and use appropriate marketing promotional tools. The bulk of innovation is realized in the market economy of the world's business structures as a means of solving industrial, commercial and marketing tasks, as an extremely important factor in ensuring the stability of their functioning, economic growth and competitiveness [2].

A market economy, which is characterized by severe competition, requires a special approach to innovation. With the aim of improving the efficiency of activities, innovations open up broad prospects for the development of modern entrepreneurship. Successful innovation activity enables the company to create a positive image, increase competitiveness, use of limited resources more efficiently, increase profits. However, it should be closely interwoven with the marketing potential of the enterprise.

The particular importance of the application of innovative solutions at the micro level in the conditions of globalization acquires the system of marketing management. First of all, it is about recognizing the importance of the consumer, his interests, requirements, and preferences as the main direction of implementation of the enterprise's

efforts, ensuring the use of competitive marketing tools in its activity [9]. Taking into account the understanding of the subjects of management in foreign markets, marketing management as a process of planning and implementation of the policy of pricing, production, and promotion of products aimed at trading operations, the innovative component involves the application of new methods and approaches to its implementation.

One of the objectives of marketing management should also be the decision of the tasks of the company's influence on the formation of the optimal balance of demand and supply, which becomes possible with the use of content marketing tools, which is currently considered as an effective way to interact with consumers in countries of the world community. The possibilities of its development are closely linked to the development of the information sphere, which is characterized by the following features. Firstly, a significant increase in demand for information due to the lack of data needed to manage its activities, and above all to determine market strategy, the development of long-term marketing programs and the choice of promising directions of production and sales. A prerequisite for increasing demand for information is also the complexity of the structure of the marketing management of enterprises, the need for them to accept reasoned decisions based on forecast information [5].

Second, the introduction of fundamentally new technology based on the rapid development of electronic computers, which contributes to the creation of effective national and international information networks. In this regard, the innovative component of the marketing management of foreign economic activity of enterprises in the context of the formation of an effective policy of product promotion involves the use of the following components of content that has an independent value for the audience: the provision of consumer articles for review articles and advice, the management of the distribution of news on products and activities of the enterprise, timely response through the Internet network to questions of buyers, providing recommendations on forums, placement in social networks of author's publications, image and information materials. In addition, increasing the effectiveness of marketing management to promote the production of enterprises in foreign markets will focus on the efforts to use infographic and visual opportunities in the online presentation of the benefits of their products

or activities in a specific market. Applying in the marketing management of foreign economic activity of the enterprises of the indicated innovative elements will allow to create a loyal image in relation to consumers, partners and suppliers, will promote the improvement of the market position in the market, will complement the system of application of innovations in ensuring all processes that are related to the operation of a particular economic entity in the world economic space [3].

The assessment of the general readiness of enterprises to perceive innovations can be carried out by analyzing the system of formation of innovation potential (Fig. 2.1), where the resources of the enterprise are defined as the means necessary to achieve the goals of mastering innovations and their implementation. From the interaction of all the components of the system, new characteristics are obtained that are not specific to each individual element and indicate the additional capabilities of the enterprise that creates the field of innovation, forming the innovative potential of the zone of probable resistance to innovation.

The basis of the innovative potential of the enterprise is personnel and material and technical components, as well as the availability of the scientific, technical and intellectual property. Especially important is the availability of specialists and scientists who provide the innovation process with new knowledge, ideas, inventions, know-how, and new technologies. It is this component of innovation potential that should focus on its support and development strategy.

In general terms, the implementation of the parameters of the innovation infrastructure of the global economy is, firstly, the internationalization of the world economy, the expansion of production activity of companies from different countries of the world community, which requires the search and introduction of new innovative methods of organizing and managing their activities in the global market; secondly, technological development of society, improvement of forms and methods of international trade in goods, which should be accompanied by the provision of new types of high-tech services. Thirdly, it is the intensive development of the scientific potential of the states of the world, accompanied by the emergence of new directions, discoveries, inventions.

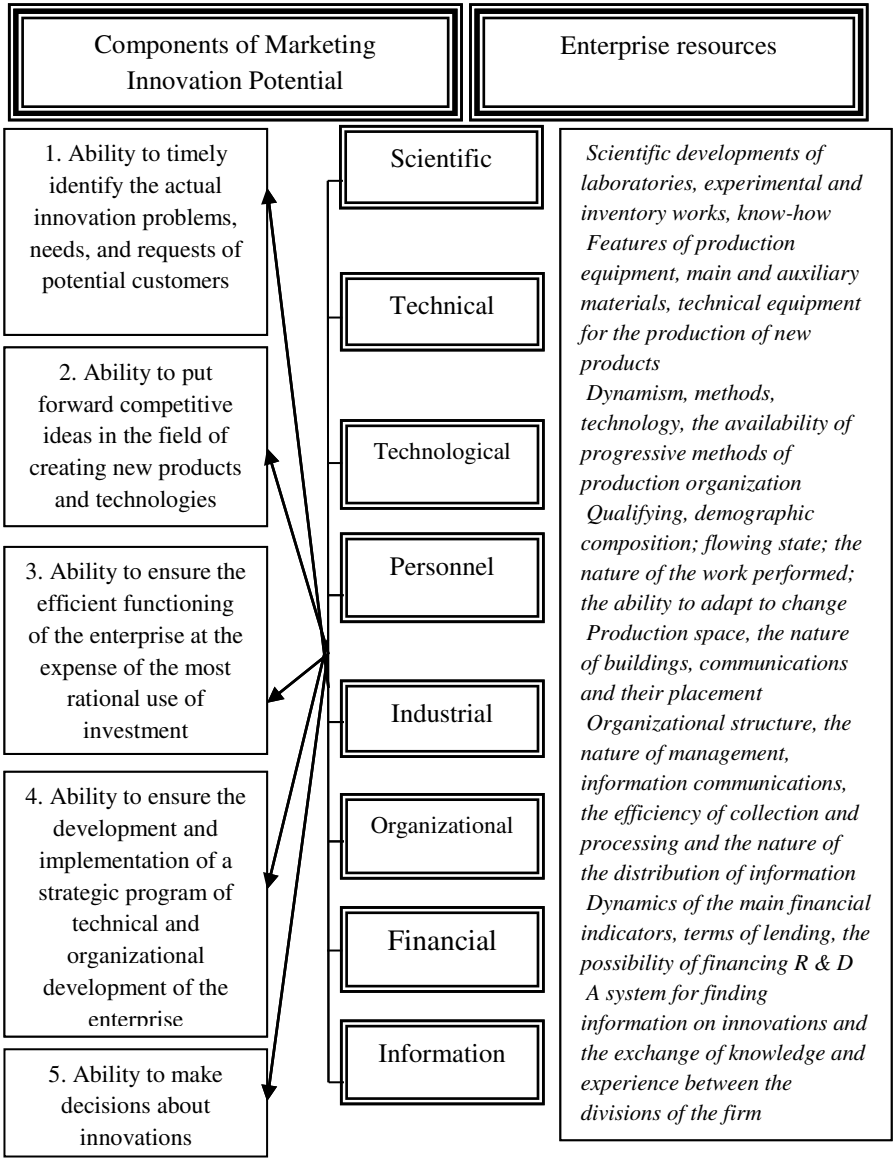

Fig. 2.1. The system of formation of parameters of the marketing innovative potential of the enterprise

Source: constructed by author.

All this contributes to the emergence of the latest forms of transfer, accumulation, and implementation of information, knowledge, experience, which is impossible without close interaction with the field of innovative services.

An important role in ensuring this interaction is the gradual coverage of the processes of globalization of all elements and levels of the functioning of the world of innovation space [4]. In this aspect, globalization should be considered as a set of innovative approaches, measures, methods of transformation of individual markets and countries into a coherent economic, social and political system, the effective functioning of which can be ensured only in the context of the definition and coordination of the common interests of the states of the world in accordance with the general norms, rules, priorities of world innovation development.

As for the question of determining the essence, the driving forces and contradictions of globalization, its influence on the parameters of innovation infrastructure and economic security of the world countries, there is still no single point of view. At the same time, the analysis of existing approaches to the definition of this phenomenon shows that almost every one of the definitions causes serious criticism from the side of the opponents. The definition of globalization of the economy as an increasing volume of international transactions, deepening of the interdependence of national economies, a new stage in the internationalization of economic activity or the current stage of international economic integration does not make it possible to identify the integrity of the qualitative features of the global economy, the specific features and features of the new world economic reality.

For the first time, the term "globalization" was introduced by T. Levitt to characterize the phenomenon of the merger of markets for individual products produced by large TNCs. Harvard Business School gave a wider meaning to the new term, in particular, its consultant K. Omi, formulating a common position, believed that the world economy was determined by the interdependence of the three centers (the EU, the USA, Japan), therefore, the important players of the world economy are, first of all, global enterprises [11].

In turn, Charles V. L. Gill believes that the understanding of globalization lies in the practical application plane and sees it as a biasing process towards a more integrated and interconnected world

economy, in which there are two components: the globalization of markets and the globalization of production" [2].

In contrast, Friedman T. treats globalization as an unbridled integration of markets, nation-states, and technologies that allows individuals, corporations, and nation-states to reach any place in the world faster, deeper and cheaper than before. In his view, globalization means the spread of free-market capitalism to virtually all countries of the world and has its own set of economic rules based on the openness, deregulation, and privatization of national economies in order to strengthen their competitiveness and increase the attractiveness of foreign capital [12].

A widespread approach to the definition of globalization is its identification with specific sets of technical attributes. B. Badi, a professor at the Paris Institute for Political Studies, proposes three dimensions of globalization, which, in our opinion, clarify it in the following aspects. First, it is a historical process that has evolved over many centuries. Secondly, it means unification of the world, life by common principles, orientation towards unified values, observance of common customs and norms of behavior, an aspiration to universalize everything. Thirdly, globalization is seen as growing interdependence, the main consequence of which is the undermining, the destruction of national sovereignty under the pressure of new actors of the planetary scene - global firms, transnational administrative structures that interact on an equal footing not only among themselves but also directly with the states - traditional subjects of international relations [7].

Given the complexity of taking into account all aspects of this multifaceted phenomenon, it is difficult to give an exhaustive definition that would cover all aspects of contradictory dynamics and multi-vector transformation of world economic life. However, it should be noted that the neoliberal model of globalization that dominates the modern world is only one of the possible alternatives to the multi-vector process of global transformation of the world economy. At the same time, globalization is closely linked to the emergence of a post-industrial society, in which development is not only a service sector but primarily sectors related to complex informatization and innovation of society. It is this type of economic organization that is not connected with the rigid geographical localization of factors of production, in its content is such that it does not recognize the narrow national framework and

objectively needs a global economic space. Therefore, the most developed countries that have entered the sphere of the post-industrial economy in a structural way have become today the main actors and drivers of this process.

Globalization develops under the influence of a number of factors, both economic and non-economic: geopolitical, social, cultural, civilizational, and environmental. This leads to an enormous variety of its specific manifestations and determines a certain split of this process, which functions in the conditions of a modern revolution in the field of productive forces: informatization and means of communication. It technologically enabled the emergence and spread of global innovative production and financial structures. First of all, it is about technological innovations that have made it possible to use a number of fundamental competitive advantages by powerful transnational economic structures. The following should be included in such advantages. First, the opportunity to significantly reduce the cost and improve the quality of the development resource base: companies operating globally have the opportunity to place production in the regions with the most optimal raw materials and use components of the highest quality, regardless of the place of their manufacturing. Secondly, it is the ability to master sales in various regional markets. This extends the lifecycle of the product and allows you to get more economies of scale. Thirdly, it is the opportunity to minimize transaction costs and pay taxes through commercial and financial activities in the optimal for these regions. Fourth, it is the effect of the introduction of innovative forms of organization and management [4].

Globalization leads to a radical change in the ratio of different sectors and sectors of the economy - from raw materials and those producing products with a low level of technology to high-tech, knowledge-intensive industries for the release of goods services. The latter receive a much higher value rating on the world market than the first. Thus, countries with a more modern economic structure have the opportunity to absorb a significant portion of global income, which is accelerating due to globalization. This is one of the most important reasons for the rising income gap between rich and poor countries in the context of globalization.

The development of globalization processes ultimately involves the creation of an integrated, interconnected world economic space.

The main consequences of this phenomenon should be considered as follows: the integrity and systematic development of the world economy; growth of openness of national economies of different countries; deepening the international division of labor; intensive development of cooperation processes and specialization of world production; formation of a single interrelated civilization with common preference, values and consciousness; increase in the number of subjects actively involved in the formation of world economic relations; the expansion of the ability of individual countries to use the optimal way of diverse resources, participation in the international division of labor with the simultaneous intensification of competition on a global scale; the emergence and development of new forms of competition; the dynamic growth of the number of countries that are parties to globalization processes.

The main categories of development of marketing innovation systems are innovation and innovation infrastructure. Innovation is a complex of measures aimed at the development and introduction of new achievements, technologies, forms, and methods of management in various spheres of public life in order to optimize them. It is, first of all, about activities aimed at improving the marketing of goods and services, technological and managerial processes, and economic development at the macro level. It is advisable to classify innovations as shown in Fig. 2.2.

Innovative infrastructure – it is a set of business entities of any form of ownership, providing services for the provision of innovation activities. Its constituent elements include business centers, business incubators, technology parks, leasing centers, financial and credit institutions, entrepreneurship funds, investment funds, innovative funds and companies, trust companies, stock and commodity exchanges, information and advisory agencies, etc. On the other hand, innovative infrastructure is a system of organizations of the main and auxiliary character, which promote innovation, serve innovation and provide conditions for the normal course of the innovation process. First of all, it is about innovation and technological centers, technological incubators, technology parks, educational and business centers and other specialized organizations. In general, innovation infrastructure serves as an element that creates conditions for innovation through the provision of a variety of services. Innovative activities of industrial enterprises

contribute to the expansion of the range of products, the creation of new markets, the preservation and expansion of traditional markets, compliance with modern rules and standards, the growth of production capacity, improvement of working conditions.

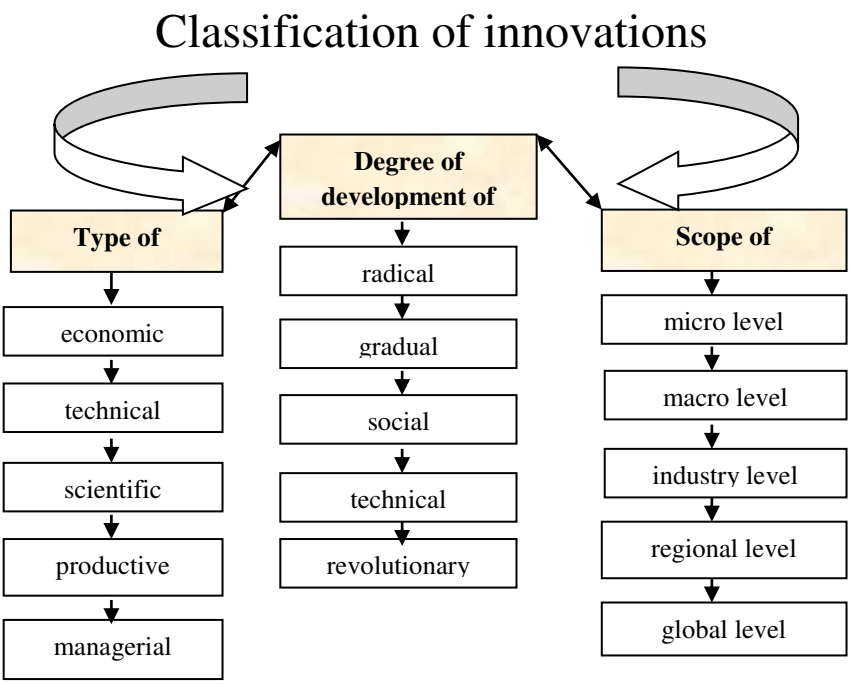

Fig. 2.2. Classification of innovations
Source: compiled by the author.

The experience of developed countries shows that accelerating socio-economic development is most effective as a result of the implementation of a complex of innovative parameters. Therefore, becoming important, in particular, the creation of national innovation systems, this is one of the strategic tasks of the dynamically developing states. The innovation system is formed under the influence of numerous factors, in particular: its territory, availability of natural and labor resources, features of the historical development of state institutions and forms of entrepreneurial activity. They determine

the direction and degree of innovation activity. Among the peculiarities of the formation and functioning of national innovation systems of developed countries, the following should be singled out: the state plays an active role in this process during the formation and functioning of the innovation system, and its formation stimulates the transition from direct management to indicative; the development of technologies, primarily of information and telecommunication networks, promote the creation of network structures, which are based on synergistic principles; increasing the role of regions in the development of innovation processes, while the innovation system is considered as one of the instruments of territorial development; integration of national innovation systems into supranational innovation systems. The development of a knowledge-intensive sector of economic activity is characterized by the following trends, which are determined by the modern peculiarities of the development of the world economy: the advance development of the field of new knowledge-intensive services based on the use of information and telecommunication technologies; activation of transnational companies' mobility and internationalization of their research activities; displacement of the centers of the world's high-tech demand in the North American region and Asia while simultaneously strengthening the competitive position in the production of innovative products of the new industrialized countries, as well as individual countries of Central and Eastern Europe; intensification of mergers and acquisitions in the global high-tech sector.

At the present stage of the formation and development of innovation systems, two approaches are distinguished in relation to the principles of establishing the foundations of the state's innovation development: European-American, the basis of which is the use and strengthening of its own scientific and technological potential for generating an innovative product, and Japanese, which mainly involves external borrowing of new knowledge and technologies and their further improvement. In each case, the strategy for the development of the innovation system is determined by the national macroeconomic policy, regulatory and legal framework, the degree and form of government regulation and intervention, the state of scientific and technological and industrial potential, the size of the domestic market, as well as the socio-cultural environment of the country.

Today, the countries of the world are entering a path of increasing openness in the field of both economic and political, cultural, technological, information relations, which is a prerequisite for the interweaving of national economies in the world. In particular, the solution to the problems of technological development forces the states to join their efforts in the overall process, in which their interaction and mutual influence become inevitable. Therefore, the prerequisites for the dynamic expansion of innovative opportunities for the functioning of economic systems is the internationalization of the world economy, the expansion of productive activity of companies from different countries of the world community, technological development of society, improvement of forms and methods of international trade in goods, intensive development of the scientific potential of the states of the world, accompanied by the emergence of new directions, discoveries, inventions. All this contributes to the emergence of the latest forms of transfer, accumulation, and implementation of information, knowledge, experience, i.e. has an impact on the innovative parameters of the infrastructure of the global economy. For Ukraine, as an active participant in world economic relations, the intensive introduction of a set of measures for the rational development of innovation parameters can become a decisive factor in ensuring a significant economic effect, which will allow our country to gradually occupy its niche in the global innovation space, corresponding to its scientific and technical potential.

The current stage of development of the national economy is characterized by actualization of processes of increasing the efficiency of the production structure, the development of the domestic market and export-oriented activities, the course of which should take place taking into account the strategy of information and innovation competitiveness and the transition of the country to the sixth technological structure. When analyzing the state of the objects of the national innovation system - innovations and ownership rights for their use, the main components of the innovation potential in terms of R & D directions and results should be noted. Ukrainian science preserves the world level in mathematics, mechanics, physics, computer science, materials science, mining, welding metals. The research of Ukrainian scientists in the field of ultralow temperature physics, in particular on nuclear magnetism, quantum effects kinetics, and electron systems localized with super

helium, has, in recent years, determined the world level of research to a large extent. Nanophysics and nanoelectronics, physical-ecological and astronomical studies have considerably expanded. Quite significant, despite the wide program of conversion, implemented in the 90's. In the 20th century, there is potential in the field of rocket systems and space technology, and Ukraine is also widely involved in space development, space navigation systems, and communications systems.

The development of technologies in automotive industry should be considered in perspective directions of scientific and technical developments in Ukraine; space exploration, astronomy, astrophysics; radio electronics; nanophysics, nanoelectronics; new information technologies; biotechnology in agriculture; production of fertilizers and plant protection products; bioengineering and genetics; production of medical products, development of energy-saving technologies; production of chemical catalysts, aniline-colored products, introduction of deep oil processing technologies; technology of liquefaction of coal. The list as a whole corresponds to the current world trends in the development of innovation. In addition, it is worth noting some complications in the development of this activity at the present stage, which are primarily due to the political situation, the lack of financial security [6].

The current stage of development of the national economy requires strengthening the state influence on the development of marketing innovation potential at all levels of its functioning by increasing funding and promoting the development of small and medium innovative enterprises; realization of the policy of structural transformations, in which the main efforts of the state will be aimed at changing the economic structure of the economic mechanism. In Ukraine, for the formation of a national innovation system, it is important, first of all, to have an effective legal and regulatory framework for regulating innovation activity, to create favorable conditions for attracting external sources of financing for innovation development. At the legislative level, the innovation activity of Ukraine is defined by the "Concept of scientific and technological and innovation development of Ukraine", the Law of Ukraine "On Innovation Activity", the Law of Ukraine "On Priority Areas of Innovation Activity in Ukraine" and others.

In accordance with the provisions of normative and legal documents in the conditions of severe deficit of funds, the principles of conformity

of the main directions of scientific and technological development to the main problems and prospects of the development of society are laid on the basis of the formation and implementation of state priorities in the field of science and technology. Consequently, the following priorities are defined as the main priorities of the state policy of Ukraine. Firstly, in the field of scientific development: fundamental science, applied research and technologies, in which Ukraine has a significant scientific, technological, production potential and capable of ensuring the output of domestic products to the world market; higher education, training of scientific and scientific-pedagogical personnel on the priority directions of scientific and technological development; scientific provision of the solution of human health problems and environmental safety; system of informational and logistical support of scientific activity. Secondly, in the field of technological development: research and creation of conditions for highly productive labor and modern life of a person; the provision of medical facilities with medical equipment, and the population - with medicinal products, means of prevention and treatment; development of resource and energy-saving technologies. Third, in the field of production: the formation of high-tech manufacturing processes, promotion of the creation and functioning of innovative structures (technology parks, incubators, etc.); creation of competitive processing facilities; technological and technical updating of the basic branches of the state economy; the introduction of highly profitable innovation and investment projects.

The main mechanism of realization of priority directions should be national and branch scientific and scientific and technological programs. Aircraft industry, rocket and space industry, shipbuilding, mechanical engineering (instrument making, power generation equipment and heavy machinery) are traditionally considered as priority directions of progressive structural shifts and innovative innovation in Ukraine. Our country has a high scientific and technical potential of its recognized scientific schools recognized in the world and unique technologies for the development of new materials, biotechnology, radio electronics, low-temperature physics, nuclear physics, electric welding, technologies in the field of informatics, telecommunications, and communications, etc. For Ukraine so far characterized by the absence of radical (basic) innovations, a few innovative products of fundamental novelty, low innovation activity of enterprises. For example, new

technical solutions at the level of the invention were used in the process of creating only 9% of the total number of samples of new equipment.

Ukraine has a number of prerequisites for creating an effective national innovation system: a significant intellectual potential of innovation development; normative legal support of innovation activity; the presence of elements of innovation infrastructure; gradual implementation of a number of innovative and investment projects. Integration of Ukraine into the global economic space requires the implementation of an effective model of innovation development.

An important role in the development of the market for innovative services belongs to the state. Today, with sufficiently high scientific and technological potential, Ukraine does not use it sufficiently in national interests. The biggest problem is that most of the work done by domestic scientists is not practical in any field of the country's economy. This causes the actual isolation of scientific institutions from entrepreneurship, and thus makes it impossible to develop the innovation process at the expense of market leverage. At the same time, the level of innovation activity of domestic enterprises has a positive dynamics.

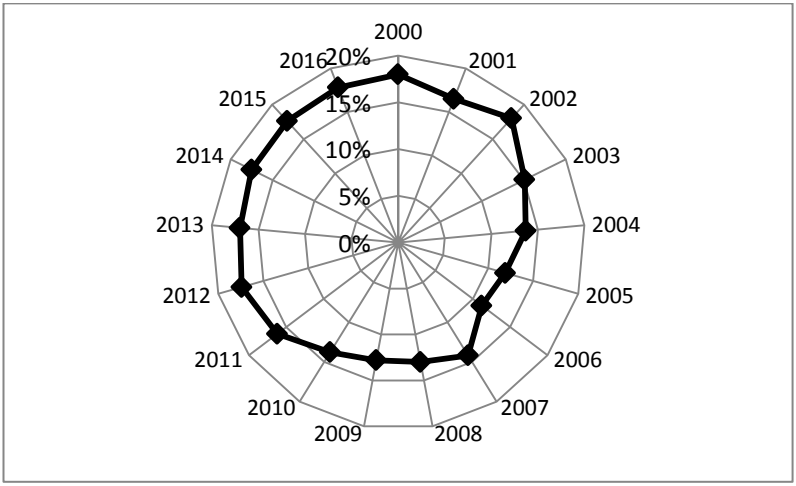

Fig. 2.3. Level of innovation activity of Ukrainian enterprises in 2000-2016

Source: elaborated by the author.

During 2016, the companies spent 23.2 billion UAH on innovation, including 19.8 billion UAH on the purchase of machinery, equipment and software, and 2.4 billion UAH on internal and external research and development acquisition of existing knowledge from other enterprises or organizations - UAH 0.1 billion and UAH 0.9 billion for other innovative activities (including marketing) [7].

Ukraine should take into account the experience of the countries of the world, which intensively implement innovations in their development in order to optimize the domestic innovation potential. An important step for our country can be borrowed from the experience of Finland in introducing new approaches to the creation of a system for the implementation of scientific and technological and innovation projects, carried out with the help of the "Sitra" Innovation Fund. The Fund as one of the players in the system of support and implementation of innovative projects has significant experience in investing in scientific and technological developments at the initial stage of commercialization when there are high risks for successful implementation of the results and profit. Such cooperation allows for the development of bilateral scientific and technical cooperation, in particular, the attraction of this fund to the implementation of bilateral intergovernmental programs in the field of innovation and scientific technologies [10].

The main problems of the development of innovative potential of Ukraine should include the insufficient level of state influence on the development of innovation activity; impossibility of accumulation of funds necessary for large-scale innovations to separate economic entities; lack of economic incentives for enterprises to carry out technological modernization by introducing new scientific and technical developments; low level of financing of innovation activity; insufficient level of orientation of activity of institutional, financial and banking systems in support of innovative development of the domestic economy. Dynamics of expenditures of the state budget for financing innovative activity in 2000-2016 presented in Fig. 2.4.

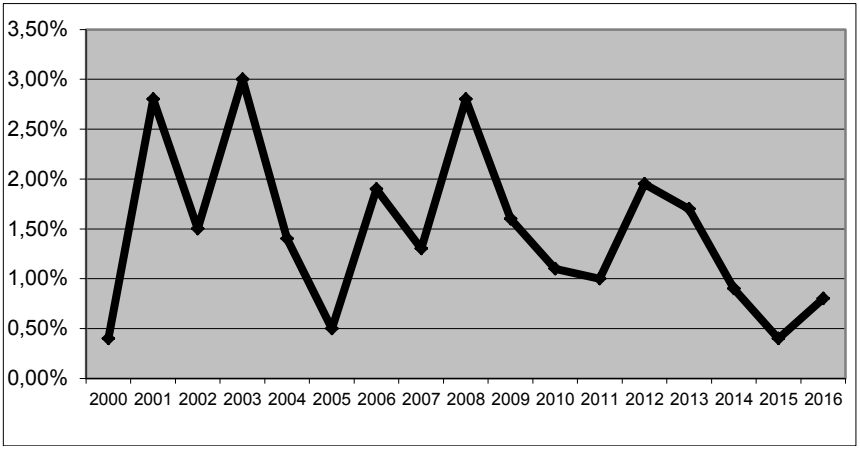

Fig. 2.4. The share of funds of the state budget of Ukraine in the total expenses for the financing of innovation activity in 2000-2016

Source: elaborated by the author based on [6].

The main directions of the strategy of stimulating innovation activity in Ukraine should be: carrying out national and regional measures that will improve the qualitative characteristics of the domestic scientific and technological potential; ensuring the growth of capital of the national economy on a new technological basis; change of technological and reproductive structure of capital investments; definition of the system of priorities of state support for innovation through the development and adoption of a law on state scientific and technical programs; creation of conditions for attracting additional financial resources, including foreign investments, by creating a bank for innovative projects on the basis of the State Fund for Fundamental Research, the State Innovation Company, etc.

The state should strengthen the direct support of the innovation process in promoting the creation of innovation infrastructure, the formation of scientific and production associations, etc. But the significant innovation must be encouraged by the state financially, for example, through preferential taxation or at the expense of budgetary allocations. This approach will promote innovation aimed at economic breakthrough and sustainable growth. Market mechanisms at the present stage will not be enough for a noticeable intensification of the innovation process in Ukraine.

Marketing innovation policy should be based on the priorities of economic policy, in particular: concentration of resources on conducting fundamental and applied research in those areas where Ukraine has significant scientific, technological and production potential; implementation of the program-target approach to financing of all sectors of the scientific sphere; introduction of market mechanisms for supporting new technologies, increasing the participation of small and medium-sized businesses in scientific and technological development; bringing the system of legal protection of intellectual property in line with international norms and introducing intellectual property into economic turnover; development and introduction of modern information technologies; overcoming overcapacity, unacceptably high energy and material consumption of our entire industry; integration into international technological flows in order to modernize domestic production.

In recent years, certain measures have been taken to stimulate marketing innovation, create a national innovation system, and create favorable conditions for companies, which invest in new technologies and energy saving. An important step in this direction was the creation of the State Agency of Ukraine for Investments and Innovations, the restoration of the activities of the State Innovation Finance and Credit Institution, the creation of a system of regional centers for innovation development. The signing of the Interstate Program of Innovative Cooperation of the CIS Member States for the period until 2020 and the Association Agreement with the EU is also becoming a priority.

The aim of the program of innovation cooperation is to increase the competitiveness of the national economies of the CIS countries due to the effective use of innovations, ensuring stable and balanced economic growth, increasing the knowledge-intensive production, the revival of trade under the conditions of free movement of goods, services, labor, and capital. The intensification of cooperation in the field of innovation in the long term should lead to multiplicative and synergistic effects in the economic development of the CIS countries. The said program will allow jointly identifying and implementing scientific and technical priorities, to implement intellectual property objects in the economic complex, which will contribute to improving the quality of national products and reducing dependence on the export of high value-added goods.

Taking into account the above, the formation of a domestic innovation system should not only ensure the formation of a knowledge-based economy but also contribute to Ukraine's participation in the world's innovation space as an equal partner, to ensure the approximation of the innovative parameters of its development to world indicators. The current stage of development of the national economy requires strengthening the state influence on the development of innovation parameters at all levels of functioning of the domestic economy by increasing funding and promoting the development of small and medium innovative enterprises; development of a policy of structural transformation, in which the main efforts of the state will be aimed at changing the economic structure of the economic mechanism.

An example of Ukraine as one of the subjects of global innovation processes reflects the general tendencies of development of this sphere, although it is objective and has its own specifics and features. In general, it should be noted that at the present stage of development of the world economy is intensifying the development of the system of marketing innovation parameters of the global economic infrastructure, the formation of national innovation systems, focused on deepening trade interaction. The leading role in the management of these processes belongs to the states of the world, which determine the norms and rules of the functioning of innovative systems, provide them with the necessary resources, promote the development of international innovation cooperation and foreign trade cooperation.

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CHAPTER 3

THE ROLE OF HUMAN CAPITAL IN THE DEVELOPMENT OF PRODUCTION AND TRADE IN HIGH-TECH GOODS AND SERVICES

Svitlana V. Sidenko

Contemporary world development has been taking place under the influence of the processes of economic globalization, the emergence of information society, rapid development of innovations and the intensification of competition for goods and services in global markets. Therefore, globalization is often defined as the process of creation and gradual development of a single global financial and economic space based on brand-new, mainly computer-based, technologies.

The development of technologies and innovations is an important prerequisite for socio-economic development of countries and for ensuring their international competitiveness. Innovative capacity and technological readiness are integral components of the competitiveness of a national economy, which is defined as a set of institutions, policies, and factors that determine a level of socio-economic development of an economy. Therefore, countries of the world concentrate considerable resources for supporting the scientific and technological development needed in the conditions of global competition. The mentioned processes affect the dynamics and structure of world trade, which is simultaneously a motive and an indicator of the development of the modern process of economic globalization.

Influenced by the development of new technologies and materials, production of goods and services is expanding, while the deepening of internationalization and the transnationalization of production, of the liberalization of international relations, of the industrialization of most developing countries and their inclusion into global economic processes contributes to the growth of world trade. For example, in 1950–2012 the world trade turnover increased by 295 times, which far exceeds the growth rate of world industrial production. In the final years of the last century, world exports were growing by 1.5–2 times faster than gross output. Only during the period of 1982–2008, the world GDP

increased by 5.6 times, and the volume of world trade in goods and services — by 8.8 times [1].

However, because of unfavorable processes in the global economy the worldwide growth of volume of international trade in goods has been slowing down during the five consecutive years — it amounted to 2.1% in 2013, to 2.7% — in 2014, to 2% — in 2015, and to slightly more than 1% in 2016, which is its lowest growth rate since the 2008–2009 crisis [2]. According to the WTO, the growth of world trade in 2017 may amount to 2.4%, but it will remain below 3%, which has been unprecedented since the Second World War [3].

Experts believe that the reason for the slowdown in world trade growth has since 2016 been growing uncertainty in economic policies of countries and a number of unfavorable conditions for the world economy, in particular, a debt crisis in a number of countries of the euro zone. At the same time, the growth of trade in services has remained relatively stable.

The characteristic feature of the modern development of world trade that distinguishes its intense development at the beginning of the twentieth century from it at the end the century, is a growing share of exports in GDP of national economies, resulting from a reduction of trade barriers and the decrease in transportation costs, and the emergence of new markets for goods and services. For example, if the ratio of commodity exports to the world GDP was 4.6% in 1870, 7.9% — in 1913, 9% — in 1929, 10% — in 1950, 14.5% — in 1970, then it rose to 25% in 2008 and to more than 31% in 2013 [1].

These trends are especially common in the most developed countries of the world; meanwhile, emerging market economies, such as the Republic of Korea, Hong Kong (China), Singapore, etc., are playing a significant role in the growth of world exports. This has led to changes in the regional structure of world export flows. For example, in the early 1950s, the US (the undisputed leader at that time) share in world exports was almost 22%, equivalent to the total exports of the countries of South and Central America, the Middle East, and Africa. However, in 2011–2013, the exports of goods in developed countries grew slower than the average in the world — by 1.5%, while deliveries from developing countries were growing faster than the average of 3.3%.

Especially noticeable growth of exports has been seen in Asian countries, where it has been increasing faster than in any other region of

the world. In 2016, China was the leader among the world's leading exporters, with other Southeast Asian countries such as Japan, the Republic of Korea, Hong Kong (China), Singapore, Taiwan, India, Thailand (Fig. 3.1) occupying high positions in the rating as well.

There is a transformation in the commodity structure of international trade under the influence of structural changes in the global economy, as evidenced by a decrease in the share of agricultural products and raw materials, fuel, and mineral production, and an increase in the share of industrial goods.

Scientific and technological progress influences the commodity structure of world trade most significantly, because the role of applied scientific research, particularly in the fundamental sciences, is growing, and the knowledge-intensive, resource-saving, information and high technologies are gaining the most in terms of development. The main trend of changes in technological processes is the advancement of automation processes and the gradual replacement of unskilled labor by the work of machines and computers. Information plays a pivotal role in the production and life of society.

High technologies (or hi tech) are the latest and most advanced technologies, which include the most knowledge-intensive industries. According to the definition by the US Department of Commerce, high-tech industries are those, where the ratio between R&D spending and the volume of sales exceeds the average figures more than twice. According to the OECD classification, the definition of high-tech industries includes three components: the share of R&D spending in industry costs, the share of high-tech components in its production, and the share of R&D personnel in the companies' staff. To these industries belong microelectronics, information technology, computing engineering, programming, robotics, nanotechnology, nuclear energy, aerospace technology, biotechnology, pharmaceutics, genetic engineering, artificial intelligence. Therefore, the global market experiences the intensification of the exchange of intellectual work products — licenses, know-how, engineering, consulting, banking, insurance, information services, as well as communications, rental and other services, which evolved in the most dynamically growing sector of world trade and reflect the powerful development of science and technology against a backdrop of the emergence of the sixth technological mode and the setup of the basis of the fourth industrial

revolution. Moreover, the share of high-tech products in trade of both developed countries and countries with new markets has been increasing as a result of the rapid development of new technologies (Table 3.1).

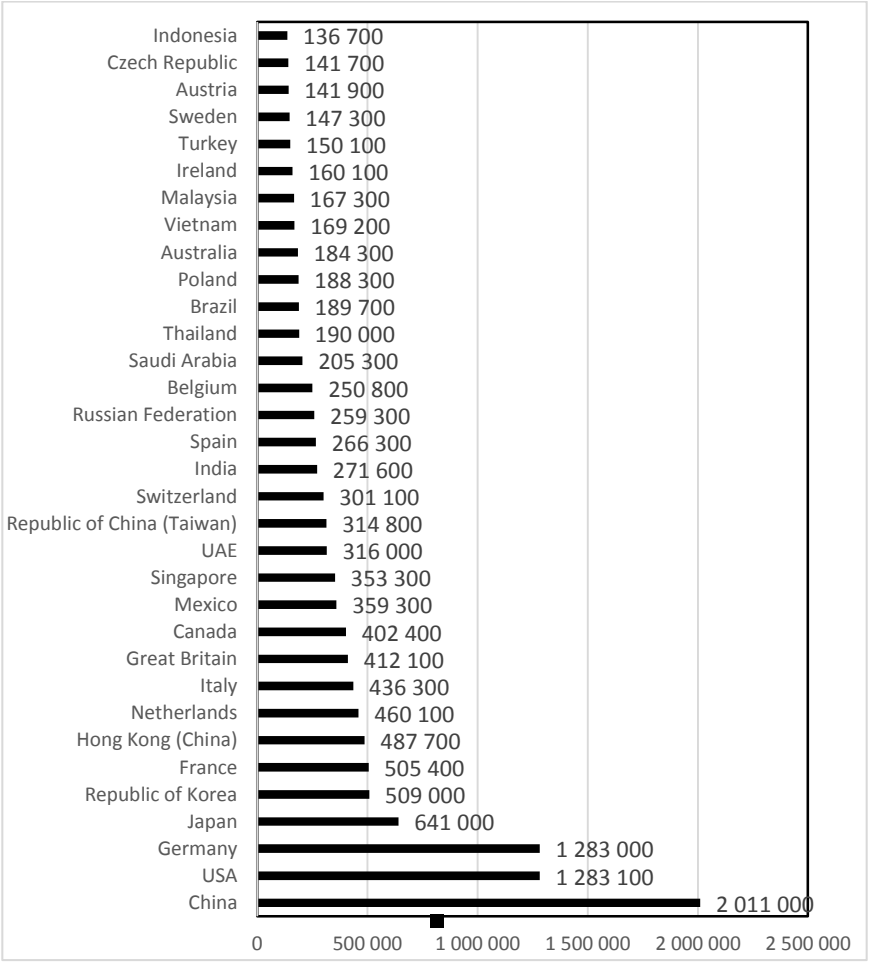

Fig. 3.1. Leading exporters of goods on the world market in 2016 World volume ($ mln.)

Source: constructed by author according to: World Bank Database – https://data.worldbank.org/.

Table 3.1

The share of high technology in the trade in industrial goods (1990–2015)

Countries	1990	2001	2003	2004	2005	2010	2013	2015
Netherlands	16	32	31	31	31	21	20	…
USA	32	32	31	32	30	20	18	19
Japan	24	26	24	24	23	18	17	17
Ireland	41	48	34	34	35	21	22	27
Great Britain	23	31	26	24	28	21	16	21
France	16	23	19	19	20	25	26	27
Israel	11	25	18	19	14	15	16	20
Hong Kong (China)	0	20	13	32	16	28	16	11
Singapore	39	60	59	59	57	50	47	49
Republic of Korea	18	29	32	33	33	30	27	27
Malta	44	62	62	58	52	47	39	32
Malaysia	36	57	58	55	55	45	44	43
Brazil	6	18	12	..	13	11	10	12
Philippines	0	70	74		71	68	47	53
Vietnam	…	…	2	6	5	6	28	…
Indonesia	1	13	14	16	17	11	7	….

Source: United Nations Comtrade database – https://comtrade.un.org/.

The statistics demonstrate that over the past 25 years a number of developed countries — the Netherlands, the USA, Japan, France, Malta — have had stable indicators of exports of high technologies — at the level of 20–30%. At the same time, it is worth noticing the growth of this indicator in countries that are not leaders in global economic development, in particular, in Vietnam — from 2% to 28%, in the Philippines — from zero to 53%, and in Hong Kong — from zero to 28%. Research demonstrates that this resulted from several factors: a state's innovation policy, spending on science and education, and — most importantly — the development of human capital, especially of an educational and qualification level of the scientists and employees who carried out and introduced R&D.

In the context of the emergence of the sixth technological mode, the world market of services begins to develop dynamically (Table 3.2).

Here the most remarkable is an increase in the exchange of information and communication services, the export of which accounts for 54.7% in Brazil and exceeds 40% in China, Finland, France, Germany, and Sweden.

Table 3.2

Exports of information and communication services of countries of the world as the percentage of the total volume of export of services (according to the balance of payments statistics)

Countries	1990	1992	1995	2000	2005	2010	2015	2016
Ukraine	..	..	13.5	8.9	7.6	17.3	31.4	..
Brazil	..	..	21.6	47.6	43.0	46.7	56.4	54.7
China	18.4	32.6	23.5	11.9	20.9	–6.1	38.2	40.4
India	..	..	..	55.0	67.2	64.1	67.3	..
SAR	9.5	7.5	15.4	10.3	9.8	13.2	16.9	17.5
Russia	..	..	21.8	19.3	23.7	30.4	32.1	30.9
Japan	..	..	..	29.0	19.8	24.9	23.0	24.4
Canada	44.9	47.2	50.2	33.8	39.3	42.7	40.8	38.9
USA	14.4	15.3	15.8	18.2	19.8	22.4	22.7	23.6
Switzerland	15.7	15.5	15.9	18.4	19.8	21.5	29.4	29.0
Great Britain	..	26.3	25.1	30.1	30.4	34.5	35.7	37.5
Finland	32.8	36.0	42.2	42.1	32.3	39.6*	50.6	48.9
France	29.8	22.1	24.8	33.2	36.3	34.4	40.6	40.6
Germany	18.7	23.0	26.8	30.0	32.9	36.6	39.7	40.7
Italy	28.0	21.9	15.5	24.8	30.1	30.8	30.8	31.4
Spain	9.5	8.6	13.8	..	..	..	27.0	27.8
Poland	..	..	14.8	15.0	17.4	33.0	32.1	33.3
Sweden	14.2	14.8	18.3	38.9	38.5	46.4	45.7	46.6
Republic of Korea	24.2	26.2	29.0	23.0	19.1	15.2	23.1	26.1
Malaysia	..	..	..	38.5	19.4	20.2	23.7	..
Singapore	..	..	16.9	20.4	22.2	22.9	29.4	29.1

Source: Структурні трансформації у світовій економіці: виклики для України / Аналітична доповідь / В. Сіденко (керівник проекту) та ін. – Київ: Заповіт, 2017. – с. 48.

Note: * 2012.

The introduction of high technologies and technological innovations is an important factor in the country's successful economic development and competitiveness because they allow labor productivity to increase,

ensure leadership on the market, reduce production costs. The successful development of such countries as the United States, Japan, Germany, Great Britain, France, where science and innovation are seen as the main driving force behind economic growth, confirms the importance of these factors for ensuring competitiveness in world markets.

Human capital is the main factor of ensuring economic growth, innovative development, and international competitiveness in an innovative development model because a human is the bearer of ideas, knowledge, skills, and qualifications. The causality of the growing influence on economic development, on the material conditions of non-economic factors — human values, consciousness, especially its cultural stratum, motives, behavior, etc. — is becoming obvious. As a human is the bearer of knowledge and innovation, which are the key factors of economic development, the need to study the human factor in economics becomes an urgent necessity. The ever-increasing role of knowledge in the production process lies at the heart of this phenomenon.

These provisions are thoroughly investigated in the writings of such world-famous scientists as F. Braudel, M. Weber, T. Veblen, E. Durkheim, C. Polanyi, J. Schumpeter and others. Later, the social values underlying the development of human potential in a growing postindustrial society were reflected in a number of concepts and theories, in particular, in the concept of human capital, developed in the ’60s of the last century by T. Schultz and G.S. Becker, both of whom later had later become Nobel laureates [4,5]. The concept of human capital is based on the assertion that now the capital is to a lesser extent embodied in the land, enterprises and equipment, material assets and to a much greater extent in human knowledge and skills.

To characterize human capital, since 1990 the United Nations Development Programme has been implementing the Human Development Index (HDI). It is an integral indicator, calculated annually for intergovernmental comparisons and measuring of living standards, literacy, education, and longevity as the main features of human potential and is a standard tool for a general comparison of the standard of living of different countries and regions.

At the global level, the highest indicators of human development are traditionally demonstrated by the developed regions of the world,

namely, by the European countries implementing the welfare state concept as well as by the United States, Australia and Singapore, which have the highest life expectancy and income levels, and consistently high educational achievements [6].

Since education and science, creativity in the economy as a source of innovation and mechanisms of economic growth constitute the basis of progress, the foundation of a successful future, this fact prompts the governments and businesses to invest in their development. Thus, according to the UN, spending on education is rising in most countries of the world, and they remain particularly high in countries that are leaders in innovation development. The largest spending on education as a percentage of GDP in 2010–2014 was: over 5% in the Netherlands, Australia, Switzerland, Ireland, Canada, USA; over 6% in New Zealand, Belgium, Malta, Cyprus, Malaysia; over 7% in Norway, Iceland, Sweden, Finland, Costa Rica, as well as 8.5% in Denmark and 12.8% in Cuba. In Ukraine, the corresponding spending accounts for 6.7% [6].

In the overwhelming majority of these countries significant educational spending is closely linked to high-ranking positions in terms of innovation and international competitiveness. There is no such interrelation in Cuba, however, since the country is still overcoming the human capital development gap. As far as Ukraine is concerned, this is confirmed by the fact that investment in human development to ensure economic and innovative growth is crucial, but insufficient, as other factors play an important role, in particular, R&D spending.

International studies have shown that countries leading in innovation development have a high share of citizens with higher education. For example, over 80% of the citizens were enrolled in higher education in Australia, Denmark, Iceland, the USA, New Zealand, Finland, Austria, Spain in 2010–2015, and the respective figure was 95% in the Republic of Korea [6].

It should be noted that among the leaders of the Global Innovation Index in 2017, four countries — Japan, the United States, Great Britain, and Germany — stand out in terms of ‘innovation quality’, an important indicator reflecting the level of development of higher education, the number of scientific publications and the number of international patent applications filed [7].

An important indicator of human capital development is welfare. A stable high level of well-being is necessary for the full satisfaction of

material, spiritual, educational, cultural and other needs for the development and personal fulfillment of a man. Such component in the Human Capital Index is GDP per capita. International comparisons show that the leading countries in human capital development have high relevant indicators: Australia, Germany, Denmark, the Netherlands, Ireland, Canada have over $40,000 per capita; Switzerland and the USA — more than $50,000, Norway — over $67,000, and Singapore — $78,000 [6].

In the ’80s of the last century, in the context of the development of a new economy and the aggravation of the competitiveness of individual countries in the global economy, a study of socio-economic growth factors demonstrated that the main source of economic growth and competitive advantages is a man. The priority of the value of human capital was reflected in growth models, in particular, in the growth model developed by R. Lewis, the winner of the Nobel Prize for Economics in 1995, where the growth of production was determined by capital — a substantiated and a human one.

In the mid-1990s, the postindustrial Western countries created a basis for self-reproducing progressive development, namely an economy backed by production, use and consumption of knowledge, which became not only the most important factor of production but also a factor of economic growth, ensuring international competitiveness and prosperity of a nation. In the knowledge-based economy, the information and communication potential, the speed of the creation, development and dissemination of new knowledge and technologies, skills, education, etc., gains its crucial importance along with such traditional indicators of the national power of a state as its territory, population, level of economic development, scientific and technological potential. The ability to create, distribute, and use knowledge becomes a prerequisite for the development of an economy. Therefore, in a knowledge-based economy, a person as a carrier of knowledge, ideas, values, etc. becomes the main factor in economic growth and enhancing of competitive advantages.

These factors became the basis for the emergence of the theory of intellectual capital in the 1990s. T. Stewart (USA) and L. Edwinson (Sweden) introduced the term ‘intellectual capital’ into scientific circles and proved a much higher value of intellectual funds of companies compared with their tangible assets [8]. Therefore, scholars proved that

intellectual capital of a corporation, as a rule, exceeds the value of its material incomes by 3–4 times.

In a climate of rapid development of the scientific and technological revolution and the establishment of the conceptual foundations of national innovation systems, the scholars from different countries, in particular professor B. Lundvall (Sweden), K. Freeman (Great Britain), professor R. Nelson (USA), formulated the main ideas of the concept of a national innovation system, which consisted in the fact that the main factors of modern economy were innovations, scientific developments, and scientific knowledge. It has been proved that these processes are interdependent and in close connection with the development of human, intellectual, and creative capital.

The Knowledge Economic Index is used in international practice to characterize innovation development. It is a complex indicator that characterizes the level of knowledge-based economy in countries and regions of the world. The World Bank developed it in 2004 within the framework of the Knowledge for Development (K4D) program, in order to assess the ability of countries to create, perceive and disseminate knowledge. The index includes four main pillars: economic and institutional regime, educated and skilled population, innovation system, information and communication technology.

According to this index, Sweden, Finland, Denmark, the Netherlands, Norway, New Zealand, Canada, Germany, Australia, and Switzerland rank the highest rating positions. Taiwan also holds a high position — 13th place, Hong Kong (China) — 18th, Japan — 22nd, Singapore — 23rd, Republic of Korea — 29th place. Ukraine ranks 56th in this rating [9]. At the same time, the innovative policy of developed countries such as Great Britain, Germany, Italy, Canada, Japan has been gradually redirected from the establishment of an exclusively innovative economy to the construction of a new innovative society.

Research shows that leading positions in international rankings for human development, competitiveness of the economy and innovation development are held by almost the same countries, regardless of territory, natural resources, established models of socio-economic development, traditions, etc. (Table 3.3). Obviously, human and intellectual capital is the key factor behind the development of innovation and economic growth on its basis.

Table 3.3

Leaders for Indicator of Human Development Index, Economic Competitiveness and Innovation Development (2017)

Human Development Index	Global Competitiveness Index	Global Innovation Index
Norway	Switzerland	Switzerland
Australia	Singapore	Sweden
Switzerland	USA	Netherlands
Germany	Netherlands	USA
Denmark	Germany	Great Britain
Singapore	Sweden	Denmark
Netherlands	Great Britain	Singapore
Ireland	Japan	Finland
Iceland	Hong Kong (China)	Germany
Canada and USA	Finland	Ireland

Source: constructed according to: Human Development Report 2017; Global Competitiveness Index 2016–2017 Rankings; Global Innovation Index 2017.

Against a backdrop of the development of postindustrial society, the role and significance of the human factor are intensifying, and the structure of labor resources is changing — the share of physical work is decreasing, and the share of mental, highly skilled and creative work is increasing. At the same time, investments in the training of labor force are growing: spending on education, professional development, and retraining of workers. To this end, postindustrial society is often described as the 'society of professionals', where the main class is the 'class of intellectuals', and the power belongs to the meritocratic, i.e., intellectual elite. One of the founders of Postindustrialism, Harvard University professor of sociology D. Bell, noted that 'postindustrial society ... implies the emergence of the intellectual class, whose representatives act as advisers, experts, or technocrats at the political level' [10].

With the advancement of the knowledge economy, not only knowledge and professionalism become important factors of economic and scientific-technical development, but also ingenuity, the utilization of talents, the ability to create, make, and bring in something new, which forms the basis for the development of sectors of the creative economy that are based on intellectual activity. The concept of 'creative economy' had originated in the early 1980s and was introduced into

academic use by the *Businessweek* magazine in 2000 [11]. The main features of the creative economy are a high role of new technologies and inventions in various fields of human activity and the urgent need to generate new knowledge.

In his famous book *The Rise of The Creative Class and How It's Transforming Work, Leisure, Community and Everyday Life* (2001), R. Florida substantiated the onset of the post-informational era, for which information and knowledge are a resource, and creativity is a driving force and the main value. By definition, the creative economy is a sector of the economy based on individual and collective creativity, skill and talent, capable of creating welfare and jobs through the use of intellectual property [12]. Therefore, modern global development requires highly developed human capital, intellectual and creative personalities.

In modern society, the determination of a growing influence on the world's economic and innovative development of non-economic factors — human values, consciousness, motives of behavior, interests, behavior, priorities, etc., becomes apparent and needs further research of the human factor in an economy. It is no accident that Richard H. Thaler became the winner of the Nobel Prize in Economics in 2017 for his contribution to the behavioral economics, the direction of economic theory that studies the influence of psychological factors on people's decisions in different economic situations. At the same time, considerable attention is paid to situations where people behave differently from what the classical economic theory predicts with its assumption of rationality and selfishness [13].

Practical interest presents the experience of the combination of successful innovation policy and intellectual, highly-skilled, creative capital of leading countries in the area of innovations. WIPO Director General Francis Harry noted that innovation created conditions for the acceleration of economic growth of countries at all stages of their development. However, these conditions do not appear automatically. Each country needs to identify a combination of policy measures that will enable the mobilization of the innovation and creative potential of its economy [7].

The experience of global leaders in the area of innovations and high technologies in the past decades confirms the need for public management and control over these processes, an increase in

the spending on science, innovation, high technologies, the development of which does cease even during the period of financial and economic crises.

The analysis of national innovation systems of the leading countries in innovation development also showed that they are characterized by active state support for innovation activity, the orientation of the national economy toward scientific and innovative development, state financial support of innovative processes, stimulation of innovations through the establishment of preferential taxation, granting of loans, development of scientific research and innovation infrastructure, the creation of a favorable investment and innovation climate. However, the development of the human, intellectual, and creative capital of the nation is crucial.

In terms of innovation development, the most successful is the research system of the United States, which is represented by more than 10,000 scientific centers, laboratories, research centers at universities, state research centers, and venture companies, which reflects the national peculiarities of the functioning of the system. A special place is given to the training of highly skilled personnel, which consumes significant financial resources — more than 5% of GDP. In addition, the involvement of foreign citizens in scientific developments is of a great importance. Due to a high level of salaries and opportunities for self-fulfillment, American universities attract the best professors, specialists, and scholars from around the world, many of whom remain in the United States. According to the US government statistics, every fourth scientist with a degree working in the country is either a foreigner or had been born abroad and then received American citizenship. Professionals from by no means poor countries, such as the United Kingdom, Germany, Canada, are moving to the USA.

The reason for this is that modern science is increasingly turning into a global cluster, and its creative forces are concentrating where a breakthrough in new knowledge and new discoveries is possible. In addition, this country more than any other spends millions of money on scientific research, has laboratories with the latest equipment, provides scientists with unlimited freedom to realize the power of the creative search, and the possibility of self-fulfillment.

This US research policy allows the States to attract professionals with high research achievements and maintain the country's leadership in most areas of science. Experts note that a significant proportion of both professors and students at American universities in the field of computer research are from China and India, and a large number of professors of mathematics come from Russia.

Experts also calculated how much the US has benefited from the use of the labor of foreign scientists and engineers. According to the Brookings Institution, the profit amounted to about $8.6 billion annually only during the period of 1950–1975 [14].

Switzerland, where way back since the 1950s the government has been implementing programs aimed at the transition of the state to the knowledge economy, was repeatedly recognized as the most innovative country. Among the country's features of innovation development researchers distinguish networks of competencies in applied sciences universities, the increase in the value of knowledge, the promotion of dialog between science and society [15].

Among the success factors of innovation development in Switzerland are the consistency of an implemented innovation policy and international orientation of enterprises. At the same time, the interconnection of the highest level of trust between the government, the private sector, and universities is of prime importance for innovation in Switzerland. The openness of the economy and the integration of human capital into it have become the main factors determining Switzerland's success in the domain of innovation.

Significant theoretical and practical interest presents the study of the phenomenon of rapid economic and innovative development of countries that were formerly significantly lagging behind in their socio-economic and technological development. The Republic of Korea, which, according to Blumberg, is recognized as the most innovative country in 2015 [16], can be such a vivid example.

In just 50 years, it has risen from a poor country to become a high-tech world-class economy, a member of the OECD. Over the past 40 years, the South Korean economy has exhausted the potential of a 'catching-up development' strategy that had stimulated economic growth, and in 2013 there was adopted a plan with the aim to create a new development model based on innovation, entrepreneurship, and the development of a creative economy. To achieve this, the country has

the necessary potential. For example, during 2010–2014 the education spending amounted to 4.6% of GDP. The share of the population covered by higher education is 95%, and in 2012 South Korean youth topped the PISA OECD test results list among countries in the area of a creative approach to problem-solving. The country's citizens are among the most active Internet users in the world — about 90% of the population in 2015. Furthermore, the involvement of universities in this process is an important direction of innovation development [16].

The experience of socio-economic and innovative development of Vietnam is no less interesting. In addition to a state policy aiming at technological and innovative development, considerable attention is paid to the education and training of highly skilled personnel; as a result, the workforce is distinguished by its young age and experience. Since 2000, public spending on education has doubled, primarily in the university sector, and in 2010–2014 they amounted to 6.3% of GDP, which is two percentage points higher than the average in low and middle-income countries. Although some countries have higher education spending, Vietnam spends money efficiently to cover broader population and at the same time ensure the minimum education quality standards. According to world rankings, 15-year-old schoolchildren from Vietnam are outperforming their peers in the United States and the United Kingdom in achievements in mathematics and natural sciences.

The country's challenge is the diversification of education support by means of attracting private investors and stimulating research at universities. In accordance with the 2006–2020 Vietnam High Education Renovation Agenda (HERA), in the coming years, revenues from research and development activities will amount to 15% of the total university profits, and to 25% by 2020. During the last decade, international cooperation has intensified, and a number of foreign universities have been opened. The number of college and university students has almost doubled in eight years.

According to its current strategies, it is envisaged that by 2020 the country will:

- be increasing the number of university and college students by 10% annually;
- increase the proportion of lecturers having a master's and doctorate degrees to 60% and 35% respectively;
- achieve the proportion of '20 students per lecturer';

• be supporting private universities (including those 100% foreign capital funded) in areas such as natural sciences and engineering, economics, and management;

• create favorable conditions for engaging foreign professors in teaching.

Achieving these goals requires appropriate funding of education and the use of other policy implementation instruments [17].

China has achieved significant progress in innovation development. According to the 2016 Global Innovation Index report, China was ranked among the world's 25 leading innovative countries and became the first middle-income country to join the group of highly developed countries that permanently top the Global Innovation Index. This reflects the country's improving innovation performance indicators.

At the Business 20 Summit in Hangzhou (September 2016), China was proclaimed as having become an innovative nation and the global leader in the scientific and technical field [18]. China has the potential to reach its goals in achieving leading positions in global innovation activities. This, first of all, implies high public spending on research and development, a large number of graduates in engineering and scientific specialties, as well as a significant number of new enterprises.

Global experience shows that for countries that chose the way of an accelerated economic development participation in innovation activities is essential. In addition, as an analysis of the effects of the global financial and economic crisis has demonstrated, innovation-oriented countries have more potential to recover from a crisis with the least losses. Scientific and technological development forms such a system of reciprocal relationships between science, industry, and society that innovations serve as a basis for the development of the economy and society, and the needs of innovation development, in turn, determine and stimulate the development of scientific activities that ensure the achievement and maintenance of a high level of national competitiveness.

This experience is useful for Ukraine. It is now clear that by using scientific and technological development Ukraine can reach a new socio-economic level of growth. Many experts have already been pointing out that as a result of the recovery from the global financial and economic crisis, a transition to a new technological level is taking place, and this requires not only natural and financial resources but rather

a level of intellectual and social capital of a nation. In this regard, Ukraine has the necessary preconditions — a high educational level of the population, schools of thought, highly skilled personnel.

According to the UN, in 2016 Ukraine was ranked 84th in the world in accordance with the Human Development Index among 188 countries. Compared to last year, the position of Ukraine in the international rating deteriorated by three ranks and was caused, first of all, by a fall in household income, which has since remained very low: the GDP per capita (PPP) was $7,361 in 2015. This is nine times less than, for example, has the leader of the rating — Norway. The indicator of life expectancy at birth is low at 71.1 years, which is significantly lower than, for example, in the European Union member states, where it exceeds 80 years. At the same time, Ukraine's undoubted advantage has still remained a high educational level of the population, which assessment, additionally, shows a rather positive dynamics. Compared to 2010, the expected duration of education increased from 14.7 to 15.1 years, while the average duration of education has remained at the stable high level of 11.3 years. The indicator of spending on education has remained steadily high — 6.7% of GDP [6].

At the present time, there are paradoxes in the socio-economic development of the Ukrainian society. On the one hand, the educational level of the population is high, comparing to the world standards, but at the same time the country has low income and low standards of living, a significant level of poverty, despite the fact that skilled and educated workers must have an appropriate material remuneration. On the other hand, we have a high educational and qualification level of the population, scientific achievements, but Ukraine holds low positions in international competitiveness ratings.

For example, in accordance with the data of the World Economic Forum, in the 2016–2017 Global Competitiveness Index Ukraine ranked 85th out of 138 countries, losing six positions in one year [19].

Ukraine holds the 64th place in the Global Innovation Index. If we analyze the positions of our country separately, in accordance with the criteria of the index, then the best results will be under the indicator 'Human Capital and Research' — the 36th place and 'Knowledge and Technology Outputs (Scientific and Practical Results)' — the 34th. Much worse results are under the indicator 'Creative Outputs' —

the 75th place, ‘Institutes’ — the 98th place, ‘Infrastructure’ — the 112th [7].

Therefore, with a rather high educational level and skilled personnel, the country is lagging far behind in the development of innovation and competitiveness in the international goods and services markets. At the same time, the share of high-tech products in its export does not exceed 3%.

In order to transfer to a new scientific and technological level, an innovation development strategy was developed in Ukraine, which is enshrined in the Law of Ukraine ‘On the Priority Areas of Innovation Activity in Ukraine,’ and which identifies strategic priorities in the field of innovation for 2011–2021, among which are:

1) the implementation of new technologies of energy transportation, application of energy-efficient, resource-saving technologies, utilization of alternative energy sources;

2) the exploration of new technologies of high-tech development of the transportation system, rocket and space industry, aircraft and shipbuilding, armament and military equipment production;

3) the application of new technologies for the production of materials, their processing and combination, the creation of the nanomaterials and nanotechnologies industries;

4) the technological renewal and development of the agro-industrial complex;

5) the introduction of new technologies and equipment for high-quality healthcare, medical treatment, and the pharmaceuticals industry;

6) the widespread use of cleaner production and environmental protection technologies;

7) the development of modern information, communication technologies, and robotics [20].

The development of scientific research in these areas will allow a technological breakthrough to happen and to take a worthy place in the global economy.

Information technology is becoming one of the priority innovative sectors of the Ukrainian economy. These days, Ukrainian business has created a modern, innovative sector of the economy focused on the global market and important in terms of macroeconomics; the exports of computer technologies is becoming one of the main sources of budget revenues and is raising Ukraine’s position in global rankings.

In Ukraine, revenues from IT-technology exports have become the third in importance, following the production of the country's agro-industrial complex and metallurgy. According to estimates, since 2013 the information industry has been demonstrating a steady increase in exports, and since 2015 it has become the third largest exports sector in Ukraine, amounting to $2.5 billion, which accounts for 3% of Ukraine's GDP [pres.]. It is expected that the IT industry will retain the third place in Ukraine's exports during 2017. According to the Information Technology Committee of the European Business Association (EBA), in the first half of the year, the volume of computer and information services exports from Ukraine has already increased to $1.256 billion, or by 18.3%, compared to the first half of 2016. At the same time, taxes paid to the state budget have already exceeded last year's figures by one third and reached UAH 3.69 billion.

The services of freelancers have undergone significant development. Since 2009, the exports volume of these services has increased from $290 thousand to $2.3 billion in 2016. Now Ukraine is the seventh in the world by the number of freelancers. It is estimated that the total volume of export of the country's IT services freelance providers amounts to $3.2–3.3 billion [22].

A dynamic development of the industry is provided by a powerful human resources potential — more than 100 thousand IT specialists, the largest number in Europe, with an expected increase of up to 200 thousand as soon as next year. There are more than two thousand startups registered in the country, and they show a rapid growth — up to one hundred percent a year.

The intensity of the expansion of innovative processes in the global economy requires Ukraine to respond to significant economic challenges. It is necessary to develop the ability to timely and efficiently implement advanced achievements in the fields of science, engineering, and newest technologies because the impact of the scientific and technological as well as innovation spheres facilitates rapid economic growth of a state.

The opportunities and pace of technological modernization will depend on an innovative environment that includes economic freedom, business conditions, competitiveness, venture capital availability, public attitudes toward commercial success, and the level of contract performance. Therefore, the transition to an innovative model of

development is impossible without the establishment of an appropriate legal framework, and its implementation requires a close interaction between the state and the civil society.

In the context of the development of information society, the prospect of effective socio-economic development is emerging for the countries of the world. Those countries that will adopt such intangible factors as knowledge, information, and creativity will become leaders in the new century. It is the development of human potential and technological progress that can be mutually complementing and reinforcing processes, which stimulate the rise of the entire society. On the contrary, the loss of positions in the field of human capital also means the loss of prospects for increasing the competitiveness of a nation at the global level. Those nations that will be leaders in the development of human capital will be the winners in the global competition.

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CHAPTER 4

DIRECTIONS FOR PROMOTING THE INNOVATION DEVELOPMENT OF INTERNATIONAL TRADE FLOWS

Petro P. Yaremovich

In today's conditions, the innovative direction of international trade is an essential condition for economic growth in the countries of the world economy. Its value for each business entity is important as the innovative orientation of international trade flows contributes to the sustainable economic development of each participating country of the world market for goods and services. International trade is the main link between the national commodity producers of different countries, forming their economic interdependence, the development of innovation production, increasing competition and thus affecting the economic growth of commodity producers and the world economy.

Uneven development of the economy branches stimulates economic entities to take an active part in the development of innovative production technologies, encourage expansion of products export of the most advanced spheres of management, search for new sales channels of products in world commodity markets. The structural changes taking place in the world economies under the influence of the scientific and technological revolution have a significant effect on the interaction of national economic entities and contribute to the intensification of the goods and services exchange between them in the global market. At the same time, it should be noted that modern international trade is gradually losing its inherent rice, which reflects only the implementation of excess production in the foreign market.

The procedure of preliminary harmonization of goods supplies between participants in foreign economic activity can be considered as one of the present innovations of the international trade, since each state conducts measures aimed at protecting the domestic market, stimulating the growth of foreign trade, changing its structure and movement directions of international trade flows. It is worth noting that the innovative orientation of international trade relations in the conditions of globalization leads to the solidarity of cooperation between economic entities involved in the production of goods and

services and their promotion in the world market in the face of global fluctuations.

In response to fluctuations in the world economy, the European Union and the United States initiated the creation of a Transatlantic Union in 2016 aimed at improving foreign trade relations. According to experts, this is an attempt to counterbalance the economies of China and India. In our view, implementing this project will be problematic, since the EU and the US are fighting a tough competition in the world market for goods and services. It is worth noting that signing such an agreement would bring economic benefits to both parties, since only abolishing trade tax will increase the annual US GDP by 1.5% and the EU by almost 0.5%. Exports of EU and US would increase by 17%.

The introduction of innovative technologies in the production of goods, the expansion of the list of services in the world market is an effective factor in Ukraine's implementation in the world market for goods and services. In this case, it is necessary to indicate two sides of this process. First, with the entry into force of the Free Trade Agreement between Ukraine and the EU, aimed at reducing and abolishing rates and liberalizing access to the European market, domestic producers will be able to export their goods and services to the EU market, avoiding bureaucratic barriers.

Second, Ukraine is not a passive consumer of imported goods and services. In turn, our country occupies leading positions in the world market of goods and services in some industries, in particular, the provision of IT services, the export-import of which in 2015 amounted respectively to 5.26 and 1.58 billion US dollars. As for the commodity group of domestic exports, the raw material industry predominates here. Unfortunately, Ukraine is a recognized leader in supplying grain, oil and honey as raw materials to the world market. In our opinion, domestic producers need to produce high-tech products, creating additional value, develop new sales channels, directing commodity flows through the network of international economic complexes to world commodity markets.

The development of the interstate and intercontinental transport and communication system, the extremely favourable geographical position of Ukraine, allows our country to make a significant contribution to the solution of the formation problem of an integrated system of global international transport corridors, acting as an equal partner in the market

of transport and logistics services. The purpose of the formation and development of transport and logistics infrastructure at the territory of Ukraine should be the provision of conditions for increasing the reliability and efficiency of Ukrainian foreign trade, attracting additional transit commodity flows for transport and logistics communications of the country, promoting the innovation movement of international commodity flows, attracting domestic and foreign investments, creating conditions to accelerate the development of individual regions of the country, integration of the Ukrainian transport and logistics complex into the EU dimensional and global transport systems.

The introduction of innovative technologies in the development of transport and logistics infrastructure, which have become the response of the world community to the challenge of fundamental phenomena and processes in the field of production and trade on different continents is one of the mechanisms for the effective functioning of international trade flows. These processes are objective, global in nature. They generate a new state of the world trade system and the international division of labour, affecting the creation and operation of the global financial system. In the course of recent years, the innovative project of creating a single planetary transport and logistics system conceptually matured on the basis of the integration of continental transport and logistics communications of strategic importance in the provision of freight and passenger transportation between Europe and Asia, Asia and America, Europe and Africa. The focus of attention was at the Europe-Asia direction. This is due to the fact that there is a vast space of more than 3 billion people, where major events in international trade occur between the poles of the West European and Asia-Pacific regions.

The nomination of the Euro-Asian world transport system to the leading positions has become a consequence of the actions of two macroeconomic factors. One of them is the instability and uneven use of the achievements of scientific and technological progress in various sectors of the world economy, which causes different rates of development of various branches of industrial production in the world economy. The other is the accelerated growth of integration processes in Europe. The first factor is shown by the short-term decline of production in some regions, specializing in certain industries, while simultaneously

expanding in others. It holds the world trading system in the tense, provoking rather sharp fluctuations in its market conditions. As a rule, this process is the source of regional financial crises that have a stable permanent character with accelerated growth points in different regions of the planet.

Sharp fluctuations in the market conditions have led to significant structural changes in certain directions of the movement innovation of international commodity flows, which resulted in intercontinental reorientation of their strategic directions and segmental changes in the structure of the world market of goods. The formation of georegional economic groups can be noted as priorities of innovation in the movement directions of international trade flows. The latest example of this is the signing of the Trans-Pacific Partnership Agreement (TTP) in 2015 with representatives of the 12 Pacific Ocean countries - USA, Japan, Australia, Brunei, Vietnam, Canada, Malaysia, Mexico, New Zealand, Peru, Singapore and Chile. In our opinion, this agreement would contribute to the creation of the world's largest free trade zone, whose members produce about 40% of world GDP and control one third of world trade. According to the Agreement, more than 18,000 customs duties on American products would be abolished, duties on most goods would be eliminated or reduced, and the mutually beneficial recognition of many regulatory regulations would be introduced. Also, the decisions of Plaza limiting the access of Japanese goods to the North American market are to be cancelled either. Canada and Japan have agreed to open their markets for American dairy products, while New Zealand has benefited from the American dairy market. It was also agreed on the unification of sanitary and phytosanitary rules, a common policy in the field of intellectual property protection, public procurement, competition policy.

In the expert environment, the Agreement caused a variety of assessments. Some believe that this is a breakthrough for the economy and is a sign that the rules of the WTO have to change, and the creation of the Trans-Pacific Partnership can become "the first sign" and soon new similar associations will emerge in other regions of the world. The Trans-Pacific Partnership is directed against China, Russia and, in general, BRICS. Anxiety was expressed by the influential Chinese edition of Global Times, which wrote that the TPP would be used by some of its participants as a mechanism of pressure on Beijing, while

believing that there were no grounds for worries, since, such a regional association will have only limited functioning without the participation of China.

However, today the Agreement has become outdated, as the current US president has abolished it by signing the corresponding decree on January 23 of the current year. It is worth noting that, despite numerous discussions, the agreement has not been ratified by the US Congress, so its cancellation will not affect US economic policy, and the Agreement itself without the participation of the US may lose its meaning.

However, if the partner countries that have signed the Agreement start practicing it, then this could be a challenge for the Eurasian Economic Union, which in turn initiated the New Silk Road project, which will include countries that remain outside the Pacific Partnership. Thus, one can state that these two unions will fight for the EU market. TPP offers transatlantic links, and Russia and China propose "Greater Eurasia" from Lisbon to Shanghai. According to many experts, this may become one of the main geopolitical battles of the upcoming decade.

In this context, economic links between Latin America and the European Union, which are important trade partners, should be noted. So if in 2004 EU exports to Latin America and the Caribbean totalled 55.1 billion euros and imports - 64.3 billion euros, then in 2013 the EU exports were already more than 120 billion euros, and imports increased to 102 billion euros. However, it should be noted that the structure of trade exchanges between two regions remains traditional: European imports consist of raw materials and minerals, while Europeans export industrial goods.

It should also be noted that with the entry of the "Global Agreement" signed in 2000 into force on an Association between the European Union and Mexico, political and economic cooperation between them would significantly strengthen. In economic matters, the implementation of the Free Trade Agreement between Mexico and the EU was facilitated, as well as the technical support of the Single Program for Assistance to Small and Medium-Sized Enterprises in Mexico, which has already received support from more than fifty thousand companies. During the ten-year period of the agreement, the volume of bilateral trade in absolute terms has increased from 18 billion dollars to almost 46 billion dollars, and the total EU investment in the Mexican economy amounted to more than 77 billion dollars. In 2013, EU exports to

Mexico totalled almost 27 billion euros, while imports from Mexico totalled almost 17 billion euros. The main consumers of Mexican goods were Germany, Spain, and the Netherlands.

An important characteristic of trade relations between Mexico and the European Union is the orientation of Mexican exports to high-tech and innovative value added industrial products. In the export of Mexican goods to the EU in 2013, 38% was for machine building products, almost 10% for optical and photographic equipment, 30% for mineral and 5% for food. At the same time, Mexico imports the component equipment that is subsequently used in the production of products for export.

It should be noted that in December 1995, the EU and the MERCOSUR signed the Interregional Framework Cooperation Agreement with the prospect of the creation of the Interregional Association, which could become the largest free trade area in the world, accounting for a total of 750 million consumers. The interregional framework agreement defines a wide range of cooperation - trade and economic relations, cooperation in the field of European integration, cultural relations, and also provides for the institutionalization of the political dialogue and the strengthening of relations between the European Union and the countries of MERCOSUR. The agreement has become the basis for the development of EU-MERCOSUR relations. For the European Union, MERCOSUR became the eighth most important trading partner. The EU is the main market for agricultural products for MERCOSUR countries, accounting for almost 20% of all imports of this category of goods. For its part, MERCOSUR countries import products from machine building, transport equipment.

A significant factor in the effective cooperation between the EU and the MERCOSUR countries is the competitiveness of their products, which is achieved by reducing the transport and logistics component in the final value of the goods. This requires the introduction of innovative technologies in the creation of new technology, the development of transport infrastructure, the introduction of modern transport and logistics technologies, which can eventually reduce the transport component at the final price of the goods to 8 – 10%, and the total cost of commodity producers for transport and logistics services by 10 – 20%.

An important link in reducing the cost of services is the availability of a developed network of international business complexes that allows the implementation of a system of large-scale route transportation, and through the application of innovative methods of information processing for the transnational logistics systems management operating within the international transport corridors, ensure the high quality of transportation between national and international economic complexes. According to UN recommendations for the effective functioning of international trade flows, world transport infrastructure requires 70-80 international economic complexes. Their creation accelerates the process of innovation development of the countries, economies causes the rise of innovation, strengthens the ability of the country enterprises to compete in the world market. There is a close relationship between the country's economic development and innovation that affects the economic indicators and social standard of living.

It should be noted that the problems of cooperation in the development of infrastructure objects, mainly related to the differences in the laws of the participating countries, and cannot be corrected. Language barriers play their negative role. However, it should be noted that the world community is aimed at reducing such obstacles. In today's world, a growing number of countries create international economic complexes and integrate them into the world transport and logistics network. The development of such facilities is beginning to affect the achievement of a higher level of regional and national development, the formation and regulation of their own innovation systems. Therefore, it can be argued that the development of the economic complexes network is one of the forms of effective promotion of the movement of international trade flows, economic and innovative development of the world countries.

The following should be highlighted among the trends leading to the acceleration of the development of international economic complexes in the world. First, erosion of borders, which exacerbates the competitive struggle and makes it necessary to look for new, more effective strategies and forms of interaction between companies in order to redirect international trade flows. Second, the strengthening of the role of world competition and the complication of its mechanism, as a result of which enterprises are not able to independently conduct competitive struggle both on the external and on the domestic markets.

Third, the globalization of the economy, which leads to the strengthening of the integration processes of economic actors and is the process of world economic, political and cultural integration and unification. The main implications of this process are the international division of labour, migration across the entire planet of capital, human and productive resources, standardization of legislation, economic and technical processes, and the convergence of cultures from different countries. This is an objective process that is systemic in nature, and covers all spheres of society's life. As a result of globalization, the world becomes more connected and dependent in all its subjects. There is an increase in both the number of common problems for groups of states and the number and types of integrated entities.

It should be noted that in today's market of international transport and logistics services there is a process of qualitative changes that has a cardinal impact on determining the movement directions of international trade flows. In our opinion, the main elements of the driving force affecting its development are the desire of companies to innovate, in particular, reducing the size of the logistics chain and optimizing costs, companies concentrating on the profile activities and giving non-core types of services to outsource, the impact of globalization processes on companies activities, participants in the transport and logistics process. All these changes make transport and logistics companies develop and implement new modern strategies for their activities, among which it is worthwhile to focus on consolidation through mergers and acquisitions, the growth of the role of information technology and data systems, the concentration on the provision of complete integrated logistics solutions, the departure of specialized services, the provision of related logistics services.

These strategies, in our opinion, will help such companies to survive the period of the global crisis more easily. As experience shows, consolidation through mergers and acquisitions changes and improves staffing potential, increases book value of the company, leads investment in the development of information technology and data transmission systems, which significantly affects the quality of the company's provision of logistics services. The integration process forces logistics companies to expand their list of services. They start to deviate from the policy of providing specialized services. More and more companies do not provide related services for them. For example,

a transport and logistics company can not only take our cargo, for example in Berlin, but also clear it in Ukraine, paying all necessary payments to the budget, then issue an invoice with all expenses.

It should also be noted that in order to increase its competitiveness, the company opens its branches in many countries of the world, which gives them an edge in the struggle for the client. Finding a company's overseas presence, either in production or service sector, helps to integrate the company into the economy, the socio-political life of the country where it is located. It's easier for the staff of the company to collaborate with their foreign customer partners while in their country. By communicating directly with representatives of business, politics, representatives of companies create a positive image of their company and the country as a whole. It is known that a positive image can significantly affect the effective performance of the company. This approach of companies to the development, in our opinion, is promising, because only being in the country of direct activity is possible to study the mentality and thinking of people living in it.

Transport and logistics companies also have a wide geographical representation. It is believed that a large company should have warehouses in all cities with a population of more than 500 thousand people. A mandatory condition must be the presence of warehouse facilities of the company in large transport centres. Such penetration allows to provide high-quality services for large trading companies, who, in order to reduce transportation costs, are looking for the shortest ways to deliver their goods to the end user. It is the trading companies that can be anchor tenants of regional economic complexes, because having an extensive network of shopping centres, they urgently need to quickly build supply chains in several regions and respond in a timely manner to the changing market conjuncture. The need to conquer new regional markets on the basis of logistics services is also undoubtedly an important reason why large trading companies will use the services of logistics networks themselves.

In the era of global integration, three main trends related to transport and logistics infrastructure can be distinguished: first, the science-intensive economy leads to conceptual changes in the functional-competent and organizational-economic structures of infrastructure. Innovative integrated communication technologies are increasingly used in various modes of transport, energy, and construction. Second, there is

a considerable increase and geographical diversification of goods and passengers transportation, due to the international orientation of business. Conceptual provisions of sustainable development of infrastructure, based on the parity of relations "economy - population - environment", put new requirements for the organization of transportation. Third, the global economy leads to the need for better coordination between the management of international transport flows and the management of international production networks. Gradually managing transport flows becomes an independent activity; logistics is widely used as a theoretical and applied discipline to optimize the management of various flows, including transport. It is worth noting that the modern network of nodal points is excessively decentralized. For example, now in Europe, there are almost 550 container terminals.

The creation of modern nodal points of intermodal transportation in the European Union should be one of the main tasks of the European transport and logistics strategy in our opinion, which will allow quickly reorienting the directions of movement of international trade flows. In conditions of free movement of goods within the integrated market of the European Union, there is a reduction in the number of national terminals and their replacement by single international economic complexes, which means a decrease in the number of infrastructure elements. Simultaneously with the formation of regional distribution centres, large companies producing goods are economic entities that carry out the accumulation, processing, servicing, separation and delivery of their goods to different countries of the world. In this regard, it should be noted that there is a tendency towards the consolidation of European international business centres, merging them into a Euro-platforms, which will enable consolidation of large batches of goods and the efficient use of intermodal cargoes.

It should be noted that well-known domestic scientists M. Yu. Hryhorak, V. L. Dykan, V. V. Zablotska, R. R. Larin give the issues of scientific substantiation of the essence of intermodal transportation, as well as foreign scientists - L. Myrotin, M. Porter, T. Prokofieva, O. Smiekhov, who defined the main principles of the functioning of the intermodal system, consisting in the unity of all parts of the transport chain in the organizational and technological aspect; the only form of interaction and coordination of all parts of the transport chain, which ensures this unity; integrated transport

infrastructure development of different types of transport; a comprehensive solution to the financial and economic aspects of the functioning of the system; the use of electronic data exchange systems to monitor the movement of goods, the transfer of information and communication.

The basic idea of these principles is based on the combination of links in the transport and logistics chain in the organizational aspect, the adoption of integrated financial and economic decisions that promote the efficient functioning of intermodal cargo transportation. The same principles are inherent in multimodal transport, the analysis of which allows asserting that they consist of three blocks: multimodal cargo automobile transportation, multimodal container transportation, logistics system and terminals. Therefore, in order to integrate multimodal transport into logistics systems of all levels, it is necessary to coordinate their functioning, which requires improving the quality of existing highways, developing new transport and logistics connections, and promoting the development of road infrastructure. This will enable the development of all transportation systems, including intermodal interregional transportation, intra-regional and urban transportation by specialized transport, local transportation by individual entrepreneurs and transport of non-transit organizations.

Thus, it can be asserted that the current trends in the development of transport and logistics services of participants in international trade relations determine the basic principles of the innovative functioning of international business complexes - integrated infrastructure development, the joint use of telecommunication networks and electronic document management systems, harmonization of the economic interests of carriers and logistic intermediaries.

The world market is undergoing a process of fundamental change. They cause a cardinal impact on the role and scope of business entities, their relationship. Mergers and acquisitions, change, improvement and expansion of profile activities are taking place that positively influence the definition of the priority directions of the international trade flows movement.

The effectiveness of the world commodity market development has a significant dependence on relations between the states and their representatives, the harmonious interaction of the international offer and international demand. It is necessary to distinguish the national foreign

trade potential of the countries of the world in the structure of the world commodity market, which is focused primarily on the implementation of innovative technologies, their application in the production of goods for industrial use and consumer goods of partner countries interest.

CHAPTER 5

THE IMPACT OF ECONOMY OPENNESS AND NEOPROTECTIONISM ON MODIFICATION OF WORLD TRADE DEVELOPMENT STRATEGY

Svitlana O. Bila

Developed countries of the world have achieved the high rates of economy growth and high levels of competitiveness taking full advantage of national economy openness in the world trade. Ukraine is the country where economic development is also grounded on market open economy formation. At the turn of the 21st century the country's participation in export and import transactions, recognition of resources, capital and workforce free movement were traditionally considered the fundamentals for developed market economy existence and were up to open economy formation within globalization processes.

Open economy is regarded as the state of national economy under which the country's economy maintains strong economic ties (including foreign trade ones) with the world economy, while having national specialization on the world market of goods and services. Open economy is the fundamentals for world trade existence, the ground for free interaction of national economy and economy of other countries of the world, which arises on the basis of goods, resources, workforce, capital, income and investments free movement. Intensity and specialization of such movement are defined by the country's place in the world labor division system. Until recently national economy openness has been considered the attribute of globalized economy successful development. At the same time, due to competition sharpening on the world market since 2015 'tectonic movements' have been observed in geopolitics which lead to the changes in attitude to national economy openness. Some politicians and scholars (including those in developed world countries) began to stand up for the idea of "economy nationalism", "economy separation", which, to their opinion, will give the countries a new stimulus for economic development and economic growth. Such issue-setting launches the discussion on strategic priorities, advantages and risks of world trade development, world countries' foreign trade modification

strategy grounded on ‘openness’ and ‘neoprotectionism’. The actual importance of such studies is confirmed with the practice of leading world countries’ economy management: from new one (neoprotectionism economic policy of the USA) to China’s statements to keep and support national economy ‘openness’ on the world market.

In fact, during the period 2015-2017 there have been radical changes in world economy and policy. Scientists and politicians more and more often speak about the new stage of development which results in changes in economic fundamentals of world order as well as political, social, institutional ones. These changes will touch on both developed countries (the USA, EU countries) and countries with transition economy which strive for implementing radical reforms, increasing national economy competitiveness in compliance with up-to-date challenges. One of such challenges is dilemma: ‘neoprotectionism’ or ‘open’ economy. It is accompanied with discussion between supporters of ‘enclosure’ and construction of nationally oriented economy and supporters of globalization by itself, deepening of international division of labor processes and international production development.

The advantages and risks of national economy openness should be considered from the viewpoint of its use prospective while developing world trade strategy. Open economy is the economy where all players of world economic relations can conduct operations on the world market of goods, resources, capital, and other production factors without any restrictions. Under open economy conditions countries are actively involved in all forms of international economic relations like foreign trade, international scientific and technical cooperation, international investment activity, specialization and cooperation of production, international workforce migration, and international monetary and credit relations. The countries closely interact with international economic and financial organizations.

The characteristic feature of the countries with open economy’ behavior is the extremely efficient use of foreign economic activity advantages. Open economy rejects state monopoly in the foreign trade, requires wide use of cooperative entrepreneurship different forms, organization of free trade zones, areas of priority development, as well as calls for eagerness of country’s domestic market and its availability to attract foreign capital, free movement of goods, technologies and workforce.

Open economy model provides for free choice, economic activity independence both within the country's borders and beyond them. The degree of national economy openness mostly depends on its level of supply with natural resources (including fuel and power ones), population size, population purchasing power, demand capacity on the domestic market. Openness of national economy is also influenced by economy industrial structure, the level of national economy dependence on 'critical import'. As economic practice confirms, the more specific gravity of traditional low technology sectors (mining, metallurgy, chemical industry, energy, agriculture) in industrial structure is, the deeper the level of countries' involvement in international labor division system is, the higher the level of national economy openness is. As the countries specializing in production of raw materials and intermediate products aim at exporting these goods to the world market, getting the currency and purchasing goods and services of high necessity with the currency received.

The analysis of Ukrainian export structure is evidence of raw materials and semi-product specialization of national production. A weighty part of Ukrainian export is taken up by the following raw materials and intermediate products: ferrous materials, grain, mineral products, products of chemical industry (including fertilizers), cattle, fell of livestock etc. At the same time, competition sharpening on the world market of raw materials, lack of processing and output of goods with high value added component in Ukraine lead to the situation when Ukraine eventually loses its positions on raw materials market, reduces export. This intensifies the problem of currency earnings and external loans (Table 5.1). In 2016 compared with 2015 Ukraine reduced export of mineral products by 10,5 %, chemical industry products – by 24,75%, ferrous and non-ferrous metals and materials – by 11,6%.

Law level of raw materials and intermediate products processing accompanied with national economy openness results in growth of import dependency of national economy. As table 5.1 shows, in 2016 (compared to 2015) the import growth in Ukraine was observed in all commodity groups: machinery and equipment +37,9%, manufactured goods +11,9%. Import of provisions also grew + 13,4%, as well as import of ferrous and non-ferrous metals and their products - by 15,5% (Table 5.1) [1]. Such tendency is too dangerous for Ukraine as it

indicates of negative tendencies intensification concerning national raw materials and intermediate products ousting by more competitive import goods.

Table 5.1

Ukrainian export and import structure by goods

	Export				Import			
	2015		2016		2015		2016	
	Bln.USD	%	Bln.USD (%, compared to 2015)	%	Bln.USD	%	Bln.USD (%, compared to 2015)	%
Total	35420	100	33571 (-5,2%)	100	38875	100	40364 (+3,8%)	100
Provisions and raw materials for their production	14479	40,9	15253 (+5,4%)	45,4	3407	8,8	3852 (+13,4%)	9,6
Mineral products	2672	7,5	2390 (-10,5%)	7,1	11180	28,8	8064 (-27,9%)	20,0
Chemical products and their derivatives	2436	6,9	1833 (-24,75)	5,5	7535	19,4	8294 (+10,1%)	20,5
Timber and wood materials	1540	4,3	1511 (-24,8%)	4,5	935	2,4	1033 (+10,4%)	2,6
Manufactured goods	503	1,4	463 (-7,9%)	1,4	1749	4,5	1957 (+11,9%)	4,8
Ferrous and non-ferrous materials and their products	9166	25,9	8099 (-11,6%)	24,1	1897	4,9	2190 (+15,5%)	5,4
Machinery, equipment and means of transportation	3343	9,4	2748 (-17,8%)	8,2	7509	19,3	10353 (+37,9%)	25,6
Others (including those of informal trade)	1282	3,6	1274 (-0,62)	3,8	4664	12,0	4611 (-1,14%)	11,4

Source: According to the data by UkrStat.

Solving this problem is probable by the innovation implementation as well as regulation of final goods production which are of high in value added capacity. It should be mentioned that it is quite threatening for Ukraine to choose the way of 'follower-up' innovation development, which means the import of old-fashioned equipment by developed world countries which may be used in further industrial processing.

Under the terms of developed countries' transition to "3D copiers" and "Industry 4.0" development the states to be the leaders of world growth will strive for purchasing old national production units to the developing countries while replacing them with the competitive up-to-date digital technologies and industrial Internet.

The analysis of the countries and regions to be Ukrainian partners in the sphere of foreign trade indicates that competitive importers from EU countries (112,8%), Europe (110,8%), the USA (114,3%) actively enters the Ukrainian market. The data are given up to 2016 compared to 2015. The regions to which Ukraine's export of national goods has grown include Africa (+ 102,5%) and Australia (+130,3%), EU countries (+ 102,4%) and European countries (+ 103,1%) [1] (Table 5.2).

Table 5.2

Countries and world regions – Ukraine's partners in foreign trade

	Export				Import			
	2015		2016		2015		2016	
	Mln. USD	%	Mln. USD compared to 2015	%	Mln. USD	%	Mln.USD compared to 2015	%
Total	35420	100	33571 (94,8%)	100	38875	100	40364 (103,8%)	100
CIS countries	7729	21,8	5961 (77,1%)	17,8	11880	30,6	10010 (81,4%)	24,8
Russian Federation only	4200	11,9	3117 (74,2%)	9,3	7420	19,1	5107 (68,8%)	12,7
EU	10447	29,5	10700 (102,4%)	31,9	13252	34,1	14877 (112,8%)	36,9
Europe	10619	30,0	10951 (103,1%)	32,6	14500	37,3	16068 (110,8%)	39,8
Asia	12275	34,7	11734 (98,6%)	35,0	6638	17,1	8178 (123,2%)	20,3
America	762	2,2	719 (94,4%)	2,1	2048	5,3	2322 (113,4%)	5,8
The USA only	462	1,3	416 (90,2%)	1,2	1396	3,6	1596 (114,3)	4,0
Africa	3755	10,6	3850 (102,5%)	11,5	444	1,1	424 (95,5%)	1,1
Australia	14	0,04	18 (130,3%)	0,05	162	0,42	116 (71,3%)	0,29

Source: According to the data by UkrStat.

In 2017 Ukraine's economy is regarded as open economy. At the same time, national economy's openness should not be interpreted verbatim et literatim, i.e. absolute openness doesn't have any restrictions as for labor force, capital and resources free movement. Moreover, there is no absolute openness in the practice of any world countries. Each national economy, including open one, mainly cares about own national economic, social and political interests, strives for protection from threats and risks of both internal and external origin. As chaotic (uncontrolled and unregulated) openness of national economy forms the real threats to national economic security, world practice employs the following terms – 'reasonable protectionism', 'import substitution', 'critical import'. This requires state regulating of foreign trade relations, e.g. introduction of both tariff and non-tariff methods of regulation. 'Reasonable openness' which is grounded on the principles of efficiency, competitiveness and national security takes into account export and import structure, trends and objective laws of customs, monetary, tax, credit and investment policies causing the country's economic behavior on the world markets.

The level of national economy openness is defined with the help of macroeconomic indicators system with their further comparison. Coefficient of export openness which means the indicator of export-to-GDP ratio is most often used as a criterion of national economy openness. According to World Bank criteria, the highest level of openness ('open economy') is of characteristic to the economies with an export-to-GDP ratio of more than 35 %; the group 'rather open economy' includes economies with an export-to-GDP ratio of 25-35 %; the group 'moderately open economy' includes economies with an export-to-GDP ratio of 10-25 %; the lowest level of openness ('rather closed economy') is of characteristic to the economies with an export-to-GDP ratio of less than 10 % [2]. The export-to-GDP ratio is not the only indicator of national economy openness.

The estimation of economy openness degree is often based on the system of indicators:

- indicators which characterize the country's activity in foreign trade: international intraindustry specialization coefficient, export quota, import quota, foreign trade quota, export structure, import structure,

comparative correlation between country's rate in world GDP and country's rate in foreign trade;

- indicators of capital export (international capital movement): level of foreign investments (assets) of given country and its correlation with national country's wealth, correlation between country's direct foreign investments and amount of direct foreign investments circulating on its territory, external debt level and its correlation with [3; 4].

Countries-leaders of world development, including the USA, EU countries, as well as the countries-leaders of 'new industrial development' like China, Singapore, and Southern Korea traditionally claim the benefits of national economy openness for developing countries. However, in practice the highest level of national economy openness is peculiar to the countries which are capable of take the most advantages of openness for economy growth activization.

In particular, the countries chose economy's openness mostly in cases when they could employ various forms of world economic ties in full and to maximum extent, as well as benefits from foreign trade. Economic practice of the turn of the 21st century indicates that economy openness was regarded as the official policy under the following terms:

- if the country had strong foreign trade specialization as for competitive high-tech goods production as well as goods with high value added component;

- if openness results in stable currency earnings, encourages national currency conversion as well as sustainability of country's monetary system;

- if national economy openness allows to respond to any external economic shocks in flexible way, e.g. changes in economic situation on world raw materials markets.

Open economy development is closely linked to the necessity of national economic security ensuring. As national economy openness contains specific risks and threats. Among the risks of openness influence on national economy development the following ones should be mentioned:

- risks of negative impact on domestic and foreign policy of the country on the part of world community and some competitive world countries (embargo, anti-dumping investigations);

- increase in country's political dependence on economic partners, especially on suppliers of 'critical import' (including petrol, gas and energy resources);

- ambiguity of state economic development strategic forecasting due to impact of chaotic price state fluctuations on the world markets of raw materials and intermediate products;

- aggressive competitiveness, damaging policy of competitors on the world markets through trade and information wars etc.;

- risks of national natural resources export at the dumping prices, 'brainwashing' from the country;

- information expansion on the foreign markets aimed at discrediting of investment environment within the country, flight of investments;

- risks of country's obtaining the status of raw-material appendage as for developed countries' economies;

- risks of state national economy's financial, technical and technological dependence on other world countries, including developed ones, risk of coming under 'external management' [5].

In the 21st century the risks of economy's openness are of great threat to the economy of developed world countries. For instance, since the beginning of 2017 the USA has claimed the course to the revitalization of national economy applying the neoprotectionist methods. As the confirmation of that, the USA exited the free trade zone agreement, Trans-Pacific Partnership, which united eleven countries of the Pacific region. Within 'neoprotectionism' policy the USA claimed their intention to impose 45 % of customs duties on all import to the USA that is likely to affect the USA manufacturers' economic interests in positive way. The USA means to concentrate its efforts on structural renovation of American economy, invests the costs to infrastructural objects developing and road works, provides the re-emission of American enterprises from the countries with cheap labor force and low wages to the USA. In its turn 'neoprotectionism' forms the grounds for set of risks for the world trade and country's economy.

Firstly, it gives a rise to the issue – how production can be backed and how employment can be applied to the American employees to the USA employees concerning the competitiveness of produced goods. The fact is the cost price of American manufacturers' production will

increase which results in decreasing its competitiveness on the world market.

Secondly, coming back to 'neoprotectionism' makes as a paramount of importance the issue of reconsidering once shaped system of international labor division which can lead to loss of resources and capital which would be reasonable to spend on structural and innovation renovation of national economy.

Thirdly, transition to 'neoprotectionism' guarantees to provide positive short-term effect in the form of economic growth, increase in country's GDP, but in long term leads to technical backwardness, national economy freeze at the stage of industrial development and refusal from cardinal structural changes connected with transition to "Industry 4.0", NBIC technologies development and corresponding reformatting, reprocessing of social and labor relations system, money turnover system and international economic relations in general.

To protect its national economic interests the USA chooses the strategy of bilateral trade agreements execution. Such practice will allow to protect American national economic interests in each case using not only 'unified'requirements to be of characteristic for the whole group of the countries (e.g. Trans-Pacific partnership), but also take into account economic potential and political weight of each partner country individually. It is clear that under such terms economically weak countries with 'weak' governments will meet halfway, being unable to protect own economic interests which in its turn will promote American export growth and general economic growth in the USA.

China is still the greatest supporter of world and national economy openness after 'neoprotectionism' course of the USA. The economic basis for this decision is the fact that China gradually takes the lead on the world market. At the end of 2016 Chinese volume of export to the USA reached 423,4 bln.USD (which is nearly 20% of Chinese total export to the world markets), whereas import of the USA to China was only 104,1 bln.USD. China's economic growth is provided at the cost of economic growth which is grounded on export of national goods and services. Actual annual pace of Chinese economic growth amounts 6,6 % which is one of the highest in the world. Such increase in China is mostly secured at the cost of domestic investments to the building sector, infrastructure construction and mining operations, at the cost of

exportable goods. Previously China exported mainly consumer goods, but for the last years China's specific weight in world export of high-tech goods and machinery has risen quickly. In 2000 China's year-on-year rate of increase was 8,4 %. According to IMF forecasts Chinese economy's growth rate will be 5,8 % under the terms of positive world state of market [6]. It is clear that backing of high economy's growth rate for export-oriented Chinese economy directly depends on maintenance of economy openness in most world countries.

World Trade Organization (WTO) is international institution which protects and introduces into practice the idea of economy openness. The main WTO functions are supervision of world trade, consulting in the sphere of world trade management, providing a framework for negotiating trade agreements and a dispute resolutions process aimed at enforcing participants' adherence to WTO agreements; development and acceptance of world trade standards; supranational surveillance of trade policy of the countries-WTO participants; joint resolutions of urgent world trade problems. WTO uses unified tools of regulation of goods and services world trade. There are tariff and non-tariff barriers in world trade allowing by WTO. Among non-tariff barriers the most efficient ones are technical barriers in trade, subsidies and compensation measures, application of sanitary and phytosanitary measures, import licensing procedures, assignment of quotas. Quotas are traditionally considered one of the forms of foreign economy non-tariff regulations. They are an administrative measure which has a direct say in foreign economy activity of economic entities and in its way restricts their access to the national country's market. Introduction of non-tariff regulation methods in 21st century is often associated with 'neoprotectionism' measures. The peculiarity of non-tariff barriers is that they, as a rule, are applied by state authorities of an individual country and used for well-defined group of goods for a specific period. So quotas are applied for specific groups of goods within limited time period. Quotas are assigned for resolving clearly defined economic and social problems of the country that directly impacts national economic security and linked to the protection of national economic interests of country's manufacturers, and therefore, providing stable rates of economic growth.

Active participation of most countries in both WTO and free-trade area (FTA) is among strategies of most world countries. In practice the

country's participation in free-trade area is linked to the membership (or potential membership) of the country in integrations. FTA provides grouping of two or more customs areas which abolished tariff barriers and other restriction measures for significant amount of goods from the countries-FTA members. At the same time specific exceptions of so called sensitive items from FTA is stipulated for the countries – FTA members. Unlike FTA, FTA + includes trade of goods as well as trade of services into preferential conditions of trade. FTA + provides access of foreign manufacturers to the national market of state procurements, liberalization of foreign investment treatment; limits state support to national manufacturers; provides application of up-to-date standards and rules intellectual property rights protection (including mutual protection of geographical indications). For instance, it concerns such names as 'champagne' and 'cognac' on European market. In general more than 3300 geographical indications are registered in EU.

Alongside the traditional (post-industrial) goods and services, innovative goods with high value added component are delivered to the world market. It is export of such goods that is the most prospective and efficient.

In fact, in 21st century radical changes in the sphere of world production are observed. In technological sphere globalization reveals 'second nature' of civilization - industrial, transport, infrastructure, communication etc. Technological ties between agents of management, between countries and continents eliminate state borders, cover the whole world through the Internet, digital networks, digital economy and digital 'e-governing'. Instead, traditional, industrial and post-industrial economy is followed by "Industry 4.0" that was stated at World Economic Forum in Davos in 2016.

Among tendencies of industrial production development inherent in "Industry 4.0" the scholars name the following: wide spread of technologies of customers' experience management; transition from mass goods\services production to 'mass customization'; transformation from globalization principle to 'glocalization', the essence of which is the principle "Think globally – act locally". Fast-paced development of the Internet of Things (IoT) is expected. Each country will have the opportunity to manage all processes distantly, including the industrial processes. 3D print will develop rather quickly, so the demand for 3D printers will steadily grow. "Smart-objects", "Smart-devices",

“Smart-sensors”, “Smart-cities” will gain popularity and spread worldwide. Production will return to ‘basic country’, thus the development of automatization and robotization in industry will prevail over advantages of low cost labor resources abroad. By 2020 the introduction of new unified standards in technology, quality, safety, environmentally-friendliness is stipulated, their observation will be of necessity and requirement even at local and regional markets. Such drastic changes will lead to radical alteration at the world labor market, in the sphere of income distribution, in health care system, demography sphere, in general, in all spheres of national economy as well as world economy, and correspondingly, will impact world trade [7].

The system of international economic affairs under the terms of rapid science and innovative technology development is modifying fairly quickly. Among the latest novices in this sphere NBIC-technologies should be mentioned. In particular, under the influence of nanotechnology spreading as a constituent part of NBIC-technology we observe transformation in nearly all spheres of human society vital activity (health care, education, IT communication etc.)

It is safe to say that NBIC-technology development affects the formation of the new world economy relations paradigm which in its turn is the basis for socio economic growth and priority economic development, reason for traditional production relations system modification, foreign trade and measurement of state’s competitiveness within globalization terms.

The potential of NBIC-technology development can be used for the growth of competitiveness both at Ukrainian enterprises and country’s economy in general. Nowadays national economy and Ukrainian businesses are looking for the new sales markets, new segments at European and world markets of goods and services. Innovative breakthrough of the country at the cost of NBIC-technology development is able to enhance essentially the level of national production competitiveness, lead to sustainable growth and Ukrainian economy development.

Among the basic priorities of NBIC-technology development the special place is taken by interaction between Information technologies and cognitive science. The creation of artificial intelligence is regarded as the materialization of this direction. It is estimated as one of the most important technological advancements of XXI century.

Experts claim that by 2020 humanity will have made software capable to imitate the process of human thinking in full (though without its emotional constituency) [8].

NBIC-technology development in this country opens up possibilities for national businesses which contributes to competitiveness growth of enterprises introducing it, increases investment prospects and national economy competitiveness in general. Among the most prospective trends of nanotechnology development as a constituent part of NBIC technology there are nano materials development (with set-up features); modification of recycling, power engineering, medicine and biotechnology, electrical engineering and IT technologies. The direct link between money investment into Research and Advanced Development requirements (by TNC, MNC, state governments) and priority spheres of world economy can be traced. Among such spheres the following should be noted: IT technology and electronics (more than 28 % of general expenses on scientific research in the world), 'health care economy' (more than 21 %); autoindustry (more than 16 %), machine building (more than 10%), chemical industry (including pharmaceutics) and power engineering (7 % correspondingly) and others. All these spheres will employ NBIC-technology [9].

In Europe Strategy "Europe-2020" has been adopted and is being successfully realized. It provides EU countries development basing on three complementary priorities: economy development relied upon knowledge and innovations; sustainable development (promoting efficient and rational resources use, environmentally friendly production, economy competitiveness growth); inclusive growth (high level of employment, leveling of social and territorial disparities of regional development) [10]. The goals of basic priorities are closely connected with innovative development: creation of Innovation Union, achievement of Resource-efficient Europe criteria; education and training development; Digital Society formation, advancement of IT and communicative technologies etc. All above mentioned strategic priorities of EU countries economic development (including those ones engaging NBIC-technology development) are extremely important and topical for Ukraine which has chosen eurointegration direction. NBIC-technology application will allow this country to fulfill innovative breakthrough [11; 12]. Moreover, the country possesses economic as well as intellectual potential. It is of great necessity to engage the state

(through the tools of state private partnership, regional clusters creation with NBIC-technology as their core), guarantee the state support (including tax and customs) of national commodity producers introducing NBIC-technology in goods and services productionand their further export to the world market.

At the turn of the XXI century among the objective laws of globalization development the trends, which remain principal ones regardless of changes from ‘openness’ to ‘neoprotectionism’, should be noted. As globalization dictates its terms at globalized markets, the terms are following: based on world economy coverage with production and marketing network of transnational corporations and transnational banks, global world production is formed. It includes interstate long-term production ties development, strategic alliances, agreements on cooperation, cluster aggregation formation.

Under globalization influence the contents of world economic ties and processes is radically changing: international trade growth rate outgoes production growth rate, amount of services in GDP outgoes volume of real production, cost estimate of financial streams outgoes transactions concerning goods and services export.

In XXI century direction and structure of international trade is changing, trade barter of science intensive and high-tech products, author’s rights, ‘know-how’ licenses etc, among world countries is growing; specific gravity of services (including financial, insurance, intellectual, informational, creative etc.) in international trade structure is growing steadily.

After 2015 the discussions concerning grounds for benefits and risks of national economy openness and ‘neoprotectionism’ emerge in world economics. Such disputes reflect the dilemma as for practice of transition of some countries’ national economies to the policy of ‘neoprotectionism’ and refusal (partial, as a rule) from national economy openness which will drastically modify the whole world trade system.

Transition from national economy ‘openness’ to ‘neoprotectionism’ aggravates system problems of world economy development, and combining with challenges regarding the transition to ‘Industry 4.0’ and reformation of social relations system in postindustrial period it launches new system of production, economic and social relation defining the human civilization development level in the 21st century.

At the turn of the 21st century globalization development has led to domination of national economy 'openness' concept and practice. Meanwhile post-crisis period and world economy recession have caused 'neoprotectionism' idea wide spreading. Such situation bears a range of challenges for countries' national economies which are the 'neoprotectionism' supporters. First and foremost, it is the threat of traditional sales markets loss for countries relying on export (due to 'neoprotectionism' measures) which can lead to aggravation of 'trade wars', as well as striving to 'maintain the new world order' and 'world market repartitioning' which shapes the threat for new hybrid and 'heated' local wars breaking out at its worst. The comeback to 'neoprotectionism' shapes the risks of world countries' external debts growth, global 'debt crisis' in global scales occurrence. Even though the transition from 'neoprotectionism' allows to provide the economic growth based on the old technological ground for some time, 'neoprotectionism' only delays the transition imminence to the new stage of postindustrial development grounded on 'Industry 4.0', on NBIC-technology system domination, robotics growth for developed world countries. Correspondingly, 'neoprotectionism' postpones a solution to the range of other topical socio-economic problems: solution to the problem of unemployment growth and search for radically new forms of employment; policy reformation of income and remuneration; resolution of demographic and environmental problems.

Summarising the research, it should be mentioned that under the influence of innovations, 'Industry 4.0' and NBIC-technology world trade development strategies hold the unified trend: they are modified in such a way that economic entities (businesses, transnational corporations and multinational corporations) of developed countries, as well as new industrial countries and other participants of foreign trade relations are oriented on flexible use of national economy openness advantages and neoprotectionism benefits while aiming at maximum economic effect in the sphere of foreign trade.

Strategies of world trade are focused on complex use of digital technologies benefits, 'Industry 4.0' and NBIC-technology. Countries-exporters are developing new business models directed at diversification of national production, export of goods and services to the world market. In foreign trade development strategies of countries which are leaders of world development transition to reverse innovation and mass

customization and to the rise of micro-multinationals grounded on system liberalization of trade and economy openness prevails. The basic trend of world strategies formation trend is «Trade reclassified: the falling cost and rising speed of trade» based on logistics development, introduction of Internet-trade and its varieties. It requires transition to smart-technologies application in maintenance of all world trade operations.

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CHAPTER 6

MODERNIZATION OF MECHANISMS OF INNOVATIVE DEVELOPMENT IN GLOBAL TRANSFORMATION CONDITIONS

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The processes of global transformation are inherent in the modern development of the world economy, are accompanied by the deepening of regionalization and the simultaneous transnationalization of productive forces and capitals, the adoption of an innovative model of development as the basis of the competitiveness of the national economy. In these conditions, the problem of choosing and maintaining an effective balance of various innovative vectors of world trade, the search for and the formation of new forms and methods for adapting the mechanisms of innovative development of the national economy to the requirements of building effective international economic relations.

Dynamic and not fully predicted changes in the balance of power between innovative countries and the changes in factors that determine the success of goods and services in world markets are forcing governments of many countries to pay more attention to the formation of conditions for strategic competitiveness of the national economy. Global transformation offers wide opportunities for modernizing the mechanisms of innovation development, the rapid transfer of information and knowledge in the form of technologies, the emergence of new types of activities based on their use. At the same time, the processes of globalization form a fundamentally new business environment, in which there are increasingly strict institutional requirements for innovation and investment activities of market relations subjects, which has more unpredictable consequences of intensifying the competitive struggle between them in the world markets for innovative products and services.

Globalization as the objective process of international socialization covers the traditional and modern forms of world economic relations (world trade, international capital movements, labor migration, development of scientific and technological and innovation cooperation,

the use of global information systems), the relationship between which is in the process of continuous changes. Accordingly, these changes are accompanied by the modernization of innovation development mechanisms, the increasing use of information technology to organize the financial space of the single market for technological, social and financial innovation [2]. The emergence of fundamentally new aspects in the content and methods of introducing modern mechanisms of innovation development goes beyond the usual ideas about the possibilities of activating the innovation activity of business entities, improving the efficiency of the functioning of the national innovation system.

The globalization of innovation activity is accompanied by changes of priorities in the process of development and commercialization of innovations, the transition to "open" innovations and, accordingly, the transition to an "open" business model. Decentralized research work, the use of outsourcing, the combination of competition with cooperation through the creation of strategic alliances enhance the efficiency of innovation business, create the preconditions for entry into international markets. In accordance with these processes, the modernization of innovative management, the mastering of new aspects associated with the globalization of high technologies, production, and financing. The highly developed countries of the world are seeking to provide the science-intensity of production at the level of 3% of the gross domestic product (GDP), as evidenced by the following data. In 2016, the science intensity of GDP in the EU was about 2.0%, in the United States - 2.6%, in Japan - 3.2%. For a long time, the leaders in the science intensity of GDP are Sweden and Finland - more than 3.0% [30]. This shows a steady trend for leading countries to increase funding for research and development.

Globalization has a special impact on the economies of countries in which there is a market transformation of the inverse type. In particular, in Ukraine, the implementation of undesirable, artificial reform efforts, especially in the process of property reform, led to the alienation of the state from innovation processes, the lack of interest of business to changes in the scientific and organizational combination of factors of production with the aim of developing and introducing new types of consumer goods, advanced technologies, production and transport means of opening new markets and forms of business organization.

As a result of negative processes, the indicator of science intensity of GDP is constantly decreasing, which is less than 1% [4].

Contradictory and ambiguous results of the market transformation of the economy affected negatively the processes of scientific and technological development, the updating of the technological base of production, the restructuring of the national economy, the presence of Ukraine in the world markets of high-tech products. In the basis of competition, as the main driving force of economic growth, innovative factors, the possibility of an effective increase in human capital and other self-reproductive factors were not laid. At the same time, the globalization of the economy, Ukraine's accession to the WTO, an important international organization with more than 150 countries, accounts for over 95% of world trade, exacerbating the problem of forming the country's ability to produce goods and services that meet established international standards [22]. The importance of the Global Innovation Index (GII) of Ukraine is low (Table 6.1).

Table 6.1

Global Index of Innovation in the World (INSEAD) in 2016

Ukraine's position on the global index of innovations	Input subindex	Output subindex	Efficiency index	GII (0-100)
Switzerland (1)	68,4	64,2	1,01	68,2
Sweden (2)	68,8	58,7	0,9	62,4
Great Britain (3)	67,5	56,3	0,8	62,4
USA (4)	68,7	54,1	0,8	60,1
Finland (5)	68,5	51,3	0,7	60,0
Germany (10)	61,9	54,0	0,9	57,1
Japan (16)	66,0	43,0	0,7	54,0
Estonia (24)	54,2	49,3	0,9	52,8
Hungary (33)	53,1	48,0	0,9	47,5
Poland (39)	48,9	40,5	0,8	43,0
China (25)	48,7	31,7	0,7	40,2
Ukraine (56)	38,9	32,5	0,8	36,5

Source: [28].

Therefore, it should be taken into account that, according to the World Economic Forum, the leading positions in the global competitiveness ranking of 2016-2017 are occupied by the economies

based on such institutional factors as advanced technologies, developed business culture and competent macroeconomic management. Among the 138 countries in the ranking, the first places are traditionally occupied by Switzerland and Singapore. The United States, the Netherlands, Germany, Sweden, Great Britain, Japan, Hong Kong and Finland have joined the top ten most competitive countries, as well as in the previous year, which, with high national competitiveness, provide a higher level of well-being for their citizens. Ukraine has gained 85th place, having lost six positions in a year (79 positions in the previous ranking). The global competitiveness index of Ukraine is 4 on a seven-point scale, which is the worst result in four years (last time this mark was achieved in the GCI 2011-2012 ranking) [31]. Despite the fact that Ukraine, according to the global competitiveness rating, has moved from the list of factor-oriented economies to the list of efficiency-oriented economies, financial institutions and macroeconomic stability are weak and vulnerable. The recession in shaping the international competitiveness of Ukraine, above all, is due to the lack of both comprehensive and sectoral strategies for the country's long-term development. Developing a long-term strategy, taking into account the strengths and weaknesses in line with the Global Competitiveness Index, will enable the Government of Ukraine to formulate tactical and strategic tasks, will contribute to the investment attractiveness of Ukraine and the formation of the country's brand [1; 22].

Consequently, Ukraine remains attractive for investment, at the same time it is not outside the world's processes, is sufficiently integrated into the world economy, and the violation of macro-stability in foreign markets has its echo in Ukraine. There is a positive impact on the economic development of Ukraine and the Free Trade Area (FTA) with the EU, in particular, from the harmonization of EU norms and standards in the area of entrepreneurship and trade, there is the rise of the country's place in the ease of business ranking, according to a study by the World Bank Doing Business - 2016 from 87th to 83rd among 189 economies of the world (in 2014 - 112th place, and in 2013 - 140). The authors of the rating noted a number of improvements in the business climate in Ukraine: improvement in lending - 19th place, registration of enterprises - 30th place (improvement by 40 positions), registration of property - 61st place (improvement by 3 positions). The country's position in international trade (109th), contract execution

(98th) and investor protection (88th) remained unchanged. Ukraine also significantly improves access to third-country markets through the harmonization of technical regulations and standards in line with EU requirements and the transition to globally acceptable standards through the conclusion of mutual recognition agreements with the EU, envisaging the prospect of recognition of relevant Ukrainian goods in the US, Japan, Canada markets and Korea [15].

In addition, Ukraine was recognized as the country that achieved the best results in improving the regulatory environment among all countries of the world in 2012-2013 [11]. A number of positive steps in this direction have already been made. From 01.01.2013, the Law of Ukraine "On stimulation of investment activity in priority sectors of the economy with the purpose of creation of new jobs" entered into force, which specifies the features of taxation of import duties of business entities that implement investment projects in priority sectors of the economy, in particular, the dismissal from the payment of income tax until 2017 and the exemption from import duty [7].

However, most of these measures only slightly improved the current system and Ukraine in the ranking remains behind the members of the EU as well as its closest neighbors, including Russia. According to the research of the European Business Association (EBA) the value of the index of investment attractiveness in 2015-2016 amounted to 2.51 and has not exceeded the pre-crisis level of 2011, remaining in the negative plane (lower than 3 points) [29]. For the further improvement of Ukraine's place in the international rankings the matter improvement of the legal and institutional framework to enhance the capacity of ensuring mechanisms of the favorable investment climate and the formation of foundations of maintaining and improving the competitiveness of the domestic economy, strengthening its innovation and export potential are relevant today.

In addition, the availability of a developed system of institutes of infrastructure of an innovation system, their ability to provide information financial and consulting services is of great importance. Recognition of innovation as the main principle of economic development by the authorities is implemented in the creation of State target programs for the development of innovation infrastructure in the unity of its components - production and technological subsystem, financial-economic, regulatory, territorial and personnel components,

development of a network of innovation centers, scientific parks, innovative clusters, etc. But the effective implementation of these programs is essentially blocked by political instability, financial constraints connected with the diversion of resources from the innovation sector.

The failures and mistakes of transition from a centralized state-planned economy to a market one "were imposed" upon a high level of errors and risk connected to the complexity of satisfying public needs based on dissemination of advances in science and technology. According to statistics, the most common mistakes of "mortality" of innovation should include: an unsatisfactory assessment of market needs (32%); technical reasons (23%); high price of a new product (14%); unsuccessful policy at world markets (13%); untimely start of sale of a new product (10%); opposition of competitors (8%) [13].

The major indicators of effective innovation performance related to the transformation of ideas into new or improved products, services and technological processes that are introduced in the market are the level of innovation activity of enterprises and organizations in industries as well as the amount of new innovative products being sold not only at the domestic, but also at the foreign markets. Innovatively active enterprises are those determining the future development of the country's economy and its competitive position at the global market. They are the points of the fastest economic growth, around which a specific creative innovation environment is formed. The development of such enterprises in various industries and regions has a positive effect on the development of the country's economy as a whole and necessitates innovative implementations.

The innovation activity of most enterprises depends to a large extent on the socioeconomic environment created by the state innovation policy, the market situation, and the demand for innovation (see Table 6.2).

It should be noted that during the last period (2000-2016) the number of innovatively active industrial enterprises was constantly changing, as indicated by the following data: in 2000 the number was 1879, representing 18.0% of the total number of enterprises; in 2008 the numbers were correspondingly equal to 1397 units and 13.0%, and in 2016 only 834 enterprises were engaged in innovation activity in industry, or 18.9% of enterprises in the research. Among the regions, the share of innovatively active

enterprises is above average in Ukraine in Kharkiv, Ternopil, Mykolaiv, Zaporizhia, Ivano-Frankivsk, Odesa, Zhytomyr, Lviv, Chernivtsi, Kherson regions and Kyiv city. A significant specific weight of innovatively active enterprises are in such economic activities as production of basic pharmaceutical products and pharmaceutical medications (47.5%), motor vehicles, trailers and semi-trailers (38.2%), computers, electronic and optical products (37 , 5%), other vehicles (36.1%), coke and refined products (28.6%), electrical equipment (28.2%) [8; 13].

Table 6.2

Innovative activity of enterprises in Ukraine

Year	Specific weight of enterprises engaged in innovations %	Number of enterprises having exported innovative products, units.	Volume of sold innovative products, mln, UAH	Specific weight of sold innovation products in the amount industrial products, %	Share of exported innovation roducts in the amount of sold innovation products, %	Number of completed scientific and technical works, units.
2000	18,0	306	9656,9	9,4	32,7	38300
2001	16,5	276	7765,9	6,8	30,5	39780
2002	18,0	308	9501,4	7,0	35,1	41498
2003	15,1	357	8973,8	5,6	37,1	63506
2004	13,7	372	11651,9	5,8	42,5	67311
2005	11,9	385	12751,9	6,5	50,0	63926
2006	11,2	337	13947,6	6,7	41,4	58743
2007	14,2	357	15560,6	6,7	36,5	62657
2008	13,0	341	14989,6	5,9	51,6	62494
2009	12,8	334	8941,4	4,8	42,0	54523
2010	13,8	343	11682,1	3,8	40,7	52037
2011	16,2	378	13956,0	3,8	29,8	52354
2012	17,4	332	10043,6	3,3	36,9	53190
2013	16,8	308	9867,5	3,3	44,7	47875
2014	16,1	296	5650,2	2,5	42,7	42953
2015	17,4	205	23050,1	1,4	40,1	41070
2016	18,9	190	25060,0	1,0	37,6	39890

Source: [8]

According to the State Statistics Service of Ukraine, the number of enterprises selling innovative products within the country and

abroad is gradually shrinking. In 2015 570 enterprises sold innovation products in Ukraine with the volume amounting to almost 23.1 billion UAH, or 6.7% of the total volume of industrial products (in 2006 - 1918 enterprises, the amount of 30.9 billion UAH, or 7.6%). Among them, 37.4% of enterprises sold products outside Ukraine with the volume amounting to 10.8 billion UAH (in 2006 - 12.8 billion UAH and 50.0%).

In total, the number of enterprises having exported innovative products outside Ukraine did not exceed 400, and the share of exported innovative products in the volume of sold innovative products - 55.0% for the period investigated. The largest number of industrial enterprises having exported innovative products are in Kharkiv, Zaporizhia, Lviv regions and Kyiv city. The results of analysis of the innovative products sales outside Ukraine by types of economic activity showed that more than half of enterprises (52.2%) that exported innovative products belonged to the field of machine building.

During the investigated period, in the structure of sold innovation products the share of products new only for the enterprise prevailed over the share of products new for the market. In 2015-2016 this ratio was 60.0% and 40.0% respectively. Consequently, the overwhelming share of sold innovative products constituted products with a low level of novelty. Only every fourth enterprise sold products that were new to the market in 2015. The volume of such products amounted to 7.3 billion UAH, with almost two thirds of it put up for export by the enterprises. A significant number of enterprises (86.0%) sold products that were new exclusively for the enterprise. The volume amounted to 15.8 billion UAH. Every third enterprise sold 40.1% of such products outside Ukraine [4].

In order to implement innovations, 181 enterprises acquired 1131 new technologies, of which 66 were from abroad. 439 technologies of the total number have been purchased with equipment, of which 43 – from abroad; 393 - as a result of research and development (12); 120 - under contracts for the acquisition of rights to patents, licenses on the use of inventions, industrial designs, utility models (8); 37 - under contracts for the acquisition of technology and know-how (3); 129 - together with the purposeful recruitment of qualified specialists.

As a result of innovation activity, 9 enterprises transferred 98 new technologies to other enterprises, in particular, 20 - outside Ukraine [13].

So, if compared with the EU countries, no type of economic activity in Ukraine has reached the average European level by the specific weight of the innovative products new for the market. As a rule, in the EU countries, the share of innovative products new to the market exceeds the share of innovative products new to the enterprise. In 2016, the specific weight of innovative products new for the market in the volume of industrial ones was only about 1,0%, and the new for the enterprise - 1,5%. While the volume of products with a high degree of novelty from the total sales was 16.0% in Finland, 12.4% in the Czech Republic, 23.0% in Greece, and 31.0% in Malta [30].

Crisis trends have affected the industrial distribution of sold innovative products. Its volumes have shrunk in key industries in Ukraine, such as mechanic engineering and metallurgy. Instead, the specific weight of food industry, coke and petroleum refining products production increased. The dynamics of the share of sold innovative products, starting from 2008, has a declining character, which can be explained by a decrease in consumer demand for products of industrial usage both during the financial and economic crisis, as well as in the post-crisis period. In 2015, the share of sold innovative products in the industrial ones was 1.4%, which is the lowest indicator for 2000-2016 [13].

At current GDP growth, the share of innovative products sold by Ukrainian enterprises remains insignificant, and after the crisis of 2008, there is a tendency to decrease. As you can see, our country's economic growth is not due to the spread of innovative component in all areas. The low share of manufactured and sold innovative products indicates that in the industrial complex the production of low technological methods is dominated and that the non-production sphere is developing. Reduction of the share of sold innovative products in the total volume of sold industrial products is due to the influence of many systemic external and internal factors. The main factors include: lack of investment, high costs of innovation, insufficient financial support of the state, high economic risk, long payout period of innovations, imperfection of the legislative framework, lack of effective institutional and tax incentives for enterprises to develop investment support for their

innovation activities, lack of demand for products and qualified personnel, opportunities for co-operation with other enterprises and research organizations, lack of information about the markets and new technologies, the low susceptibility of entrepreneurship to innovations, the limitation of labor productivity growth, the growth of the energy intensity of production, the lack of a basis for modernization and structural adjustment of the business sector, and not a high-quality upgrade of it [8].

The volume of innovative (high-tech) products import to Ukraine continues to exceed the domestic production volumes, and the level of science intensity of domestic products is gradually decreasing. Innovative activity of industrial enterprises, small and medium-sized businesses is at an extremely low level. The influence of world and domestic economic factors on the development of Ukrainian imports is also quite controversial. Anticipating inflation and depreciation of hryvnia, domestic consumers purchased more imported goods in order to save their savings, thereby stimulating the growth of imports. This primarily reflects the consumer policy of our state: we are ready to buy everything that we lack instead of producing by ourselves. Accordingly, domestic enterprises don't have much to sell at the foreign market.

In today's globalized world, the innovative type of development determines the competitive position of countries in world trade. The concentration of the most profitable types of business in the innovative countries is due to the high specific weight of value added in products in the price of the product, the formation of a high-tech structure of national production and the significant financial flows. Aggravation of competition is accompanied by opposing tendencies, namely: combination of efforts and resources and cooperation in the form of unions and alliances. This allows to implement a common innovation policy and expand the presence of high-tech commodity products at world markets [16].

The aspiration of Ukraine to integrate into the world and European innovation space and the creation of long-term conditions for the growth of the national economy competitiveness necessitates the modernization of innovative development mechanisms. Various levels of scientific and technological development in the EU countries motivate the development of specific approaches to adapt tools for deepening

innovation and technology cooperation, coordination of integration processes and macroeconomic policies.

By its condition, the domestic industry meets the criteria of the fourth wave of innovation, which is based on ferrous and nonferrous metallurgy, synthetic materials, chemical industry and processing industry. The low level of the intellectualization of production processes does not contribute to the reproduction and usage of human capital and the renovation of production capacity on a new technological basis. The average level of equipment deterioration in industry reached 60-90% at the beginning of 2017. At the same time, the transition of world leaders to the fifth wave of innovation, which is based mainly on microelectronic technologies and the latest information technologies, allows them to control about 80% of high-tech products [4; 12; 20; 25]. The results of the liberalization of foreign economic activity indicate, according to leading experts, an absolutely unequal exchange not only in terms of export and import of high technologies, but in general, as in its structure natural resources, as well as primary processing products, are dominated by three and even more times by specific weight, than in the developed world. The share of finished goods in the structure of export in the developed countries exceeds 70% and is steadily increasing, while in Ukraine it does not even reach 40% [13].

The economy of Ukraine and the one of EU, USA and Japan are at the absolutely different stages of development. When in the developed countries for almost 40 years lasted the stage of the contribution of scientific and technological progress to economic growth being decisive, for our country the task of a rapid innovation production renewal is complicated by the general state of the economy and the ambiguous influence of transformation processes.

During the years of independence in Ukraine the opposite processes may be observed such as sharp reduction in the financing of scientific, technological and innovation activities, rapid decrease in the number of scientists working in the field of technical sciences and a disastrously outdated research base of the domestic science. The following figures should be enough: only about 2% of scientific equipment corresponds to the current level of world standards and the level of financing of scientific and technical works is much lower than the 30% of the total expenditures guaranteed by the Law on Scientific and Technical and Scientific Activities. This negatively affects the technological

innovations of products and the enterprises innovation activity. Thus, according to leading experts, only 4% of products produced in Ukraine belongs to the fifth wave of innovation, while the third wave of innovation makes up nearly 58% and the fourth one makes up 38%. The share of high-tech products in the GDP structure is less than 1% and in the world markets it reaches only 0.02% [11; 13].

The overcoming of technological breakdown between Ukraine and other developed countries depends to a large extent on the position taken by the state in relation to the condition and dynamics of the development of the innovation sphere. This results from the properties of innovation, which are associated with high capital intensity, a significant risk of loss of financial resources and the uncertainty of the results of scientific research.

The innovative development shows the potential of the national economy, its ability to accumulate new knowledge and technological solutions on its own reproductive basis. However, in a context of global transformation, based on the acceleration of the movement of innovations, capital, financial and other resources, a long-term social and economic effect is achieved in the process of integrating the innovative capabilities of individual countries. In this case, the current unevenness of innovation activity and the inadequate national interests and the interests of individual business groups generate fragmentation of integration processes in the innovation sector. Therefore, innovative activity should provide the internal needs of the national economy and simultaneously be able to use integrated intellectual, scientific, technological and resourceful opportunities for its competitive development [16].

This requires modernization of the mechanisms of the innovation development, taking into consideration both the interaction and complementarity of their internal component, related to reformatting the national innovation system, and the external integration component. The basis for such modernization is an effective market economy and the economy competitiveness. In particular, the EU's integration potential is attractive to Ukraine by its characteristics of general economic development, investment activity and social standards. At the same time, the analysis of the innovative potential of Ukraine based on a resource, productive and effective components allows us to assert that there are no effective mechanisms that can smoothly combine

scientific, technical and resource opportunities to use integrated innovation potential at the micro, macro, regional and global levels [10; 11; 25].

Among the most significant problems hindering the adaptation of innovative development mechanisms are the deformed structural relations in the national innovation system. There is a high concentration of scientists in the academic and university sectors combined with the insufficient level of development corporative sector. Thus, the scientific personnel potential is concentrated mainly in the universities and institutions of the National Academy of Sciences of Ukraine contrary to the corporative sector [13].

Another harsh problem is Ukraine's lagging behind other countries in terms of scientific and technological development, which remains extremely uneven. The high (sometimes world known) level of achievements in some spheres is combined with the problem zones of technological backlog, the sizes of which acquire destructive scales. These developmental imbalances are regularly documented both by domestic statistical surveys and global competitiveness and innovation readiness ratings.

According to a study conducted within the framework of the preparation of the Ukraine's Innovation Development Strategy for the years 2010-2020 under the conditions of globalization challenges, up to 75% of the national scientific potential is currently used to support the already achieved scientific and technical level of the economy, when only a small part of it is oriented on the modernization of scientific knowledge [19].

The confrontation to the negative external factors and the sustainable development of the national economy becomes possible only with the proper financial support of the innovation processes development. The weakness of the financing system and the systems of lending and investment as well as lack of state financial support and tax preferences for the subjects of innovation activity has a negative impact on the formation of an innovation-oriented economy and participation of the country in trade in high-tech products. After all, such an economy has a well-defined orientation to the reproductive process to achieve technological competitiveness through the lack of scientific knowledge and innovation and the high production efficiency [14].

For Ukraine the formation of an innovation-oriented economy requires changes in the activities of institutions and above all changes in the state, which should become a booster and organizer of the development and implementation of innovations and an institutional push for the activation of innovation activities. The separation of certain procedures that are capable of transforming into an institution from the functions of state regulation, that acquires the unconditional necessary characteristic of a functioning economy, can significantly accelerate the formation of an innovation-oriented economy. The activities of these institutions should reflect the target priorities of the innovation development strategy and the relevant mechanisms and financial instruments that are consistent with the general concept of the economy regulation [26].

An important tool for the formation of an innovation-oriented economy is a system of indicators for assessing the potential for future transformations and competitiveness in the micro and macroeconomic dimension. In modern world an assessment of the readiness for the formation and development of an innovation-oriented economy takes place on the basis of various rather diverse and non-intrusive approaches such as taking into account the signs and factors that ensure the growth of innovation by calculating the indices [17, p.19-20]. In particular, the system of indicators of the European Union includes 17 indicators covering human resources, a system for generating new knowledge, a system of transferin and implementation , innovation finance and the results of innovation as well as investments and the innovation market and information technology [29]. The significance of these indicators and the dynamics of their changes can be used in developing the strategy of innovation development, implementation of the policy of the increasing national economy competitiveness.

The research and developments are the main driving force of the innovations, while indicators of scientific research spending and knowledge-intensive scientific research (the share of spending on scientific and technical work in scientific research) are among the key indicators used to monitor resources allocated to scientific and scientific and technical activity.

In order to stimulate the EU countries competitiveness one of the five objectives of the Europe 2020 strategy is to increase the science-intensive GDP to 3% by 2020.

According to a preliminary data assessment in 2015, the European Union (EU) Member States spent about 300 billion euros on scientific research, which is 2.03% of GDP and similar to the data for 2013-2014, but exceeds greatly the one in 2004. (1.76%). In comparison with other developed countries the GDP knowledge intensity of in the EU was significantly lower than in South Korea (4.15% in 2013) and Japan (3.47% in 2013), lower than in the United States (2 , 81% in 2012) and almost equals to the one in China (2.08% in 2013). (see Table 6.3).

Table 6.3

The specific weight of research and developments expenditures in GDP (according to Eurostat)

(in percentage)

Country	2010	2011	2012	2013	2014	2015
EU 28	1,93	1,97	2,01	2,03	2,04	2,03
Bulgaria	0,56	0,53	0,60	0,63	0,79	0,96
Estonia	1,58	2,31	2,12	1,73	1,45	1,50
Spain	1,35	1,33	1,29	1,27	1,24	1,22
Latvia	0,61	0,70	0,67	0,61	0,69	0,63
Lithuania	0,78	0,90	0,89	0,95	1,03	1,04
Germany	2,71	2,80	2,87	2,82	2,89	2,87
Poland	0,72	0,75	0,88	0,87	0,94	0,98
Romania	0,45	0,49	0,48	0,39	0,38	0,49
Slovakia	0,62	0,66	0,80	0,82	0,88	1,18
Slovenia	2,06	2,42	2,58	2,6	2,38	2,21
Hungary	1,15	1,19	1,27	1,39	1,36	1,38
Czech Republic	1,34	1,56	1,78	1,90	1,97	1,95
Ukraine	0,75	0,65	0,67	0,70	0,60	0,55

Source: [30]

In 2014-2015, the science-intensive GDP higher than 3% was recorded in the EU member states of northern Europe: Finland (3.17%), Sweden (3.16%) and Denmark (3.08%); almost 3% in Austria (2.99%) and Germany (2.87%); higher than the EU average - in Belgium (2.46%), Slovenia (2.39%) and France (2.26%). In contrast, in the nine EU member states, the GDP science-intensiveness was below 1%: in Romania (0.49%), Cyprus (0.47%), Latvia (0.68%), Croatia (0.79%),

Bulgaria (0.96%), Greece (0.83%), Malta (0.85%) and Poland (0.98%). Compared to 2004, the GDP science-intensiveness in the twenty three member states of the EU has decreased in Croatia (from 1.03% in 2004 to 0.79% in 2015), Luxembourg (from 1.62% to 1, 24%), Finland (from 3.31% to 3.17%) and Sweden (from 3.39% to 3.16%) remained unchanged in Romania. For Ukraine, this indicator in 2016 was 0.48% (in 2005 - 0.55%).

The number of researchers in the EU-28 has increased in recent years and reaching the mark of 1730.0 thousand people in 2014 (equivalent to full employment), which is 41.0% more than in 2004. Analysis of GDR staff in the EU 28 by sectors in 2014 shows that 48% of researchers are concentrated in the business sector, 39% - in the sector of higher education, 12% - in the public sector. In the entrepreneurial sector, there were three-fifths or more researchers from Sweden, Malta, Austria, Ireland (2013 data), Denmark, France and the Netherlands; the largest number of researchers was employed in the public sector in Bulgaria (43%); about two-thirds of all researchers were employed in the higher education sector of Slovakia, Latvia and Greece, and more than half of them worked in Lithuania, Cyprus, the UK, Portugal, Poland, Estonia and Croatia. The total number of workers employed in the scientific and technological sphere in 2014 had an average of 1.1% of the EU 28 labor force. At the same time, the highest (about 2.0%) share was in Denmark, Finland and Luxembourg, the lowest in Romania and Cyprus - less than 0,5% [30].

In Ukraine, the number of researchers (as well as the total number of R&D performers) is constantly decreasing and in 2015 it was only 58.7 thousand people. More than half of them worked in the public sector (55.3%), more than one third - in entrepreneurship (34.5%) and 10.2% in the higher education sector; the proportion of women was 45.8%. The share of scientific and technical workers in the number of employed population was 0.5% [13].

The number of scientists per 1000 occupied population in the USA is 8.6, in Japan - 10.2, Germany - 6.7, Canada - 6.1, UK - 5.5, in Ukraine - 5.6. According to the data, the scale of the human resources component of the scientific potential per 1000 employed does not exceed twice as much, but the financial support per one such scientist is equal to the United States - 29.4 million dollars. USA, Japan - 9.5, Germany - 7.1, Great Britain - 4.5, France - 4.3, Canada - 2.6,

Ukraine - 0.08. The given data show disproportions in the structure of the scientific potential of Ukraine: the personnel potential is not supported financially, has limited access to sources of world information resources [11; 30].

As a result, the share of internal and external research works decreases, demand for the other external knowledge falls (see Table 6.4).

Table 6.4

Total amount of innovation costs in industry

Year	Fixed assets investments, UAH million	Total expenditures, UAH million	Including			
			Research and development, UAH million	Purchase of machine equipment and software, UAH mln	Acquiring other external knowledge, UAH mln	Other expenses, UAH million
2000	18783.0	1760.1	266.2	1074.5	72.8	346.6
2001	24404.1	1979.4	171.4	1249.4	125.0	433.6
2002	28022.3	3018.3	270.1	1865.6	149.7	732.9
2003	35534.8	3059.8	312.9	1873.7	95.9	777.3
2004	46966.4	4534.6	445.3	2717.5	143.5	1228.3
2005	52356.0	5751.6	612.3	3149.6	243.4	1746.3
2006	63119.3	6160.0	992.9	3489.2	159.5	1518.4
2007	81461.3	10821.0	986.4	7441.3	328.4	2064.9
2008	82366.9	11994.2	1243.6	7664.8	421.8	2664.0
2009	47760.9	7949.9	846.7	4974.7	115.9	2012.6
2010	43457.0	8045.5	996.4	5051.7	141.6	1855.8
2011	57666.8	14333.9	1079.9	10489.1	324.7	2365.1
2012	62578.4	11480.6	1196.3	8051.8	47.0	2192.8
2013	59238.8	9562.6	1638.5	5546.3	87.0	2295.0
2014	46672.2	7695.9	1754.6	5115.3	47.2	778.8
2015	21200.0	13813.7	2039.5	11141.3	84.9	600.7
2016	25470.0	23229.5	2457.8	19829.0	64.2	878.4

Source: [8; 13]

According to the State Statistics Service of Ukraine, the total amount of innovation costs in industry is slowly increasing. It was only during 2016 that the enterprises spent 23.2 bln UAH on innovation, including 19.8 bln. spent on the purchase of machinery, equipment and software, for internal and external R & D the costs totaled 2.4 bln. UAH, for acquiring existing knowledge from other enterprises or organizations - UAH 0.1 billion and UAH 0.9 billion for training and personnel training for the development and introduction of new or significantly improved products and processes, marketing, activities related to market introduction of innovations and other work related to the creation and innovation (other expenses).

The largest amount of money was spent by the enterprises of Dnipropetrovsk, Kharkiv, Vinnytsia regions and Kyiv. Among the types of economic activity the most money were spent by enterprises occupied within metallurgical production, natural gas extraction, food production, machinery and equipment, production of motor vehicles [4].

Miscalculations in macroeconomic policies and structural priorities have a negative impact on the development of scientific and technological and innovation activities. In particular, the focus of the public administration on calculations with the fuel and energy complex (FEC) proposes the latter as the actual structural priority in favor of which the very shortfalls in the Ukrainian economy of money resources are redistributed, which limits the possibility of public funding of fundamental research as the initial stage of the innovation process. The possibilities of the entrepreneurial sector to invest in promising innovative projects are also narrowing.

At the same time, the activities of business entities are influenced by new phenomena in scientific and technological development, called "new economy", or "knowledge-based economy» is a knowledge-based economy grounded on generation, distribution and the use of knowledge and information, or "intelligence economics", which relies on the use of intellectual and human capital. In this economy, knowledge acts as a source of economic wealth and innovative development of high-tech products. Thus, the USA - the world leader in the knowledge economy - has the following shares of the global market for products of high-tech industries: aerospace - 54.7%, computers and office equipment - 34.1%, communications equipment - 34.4%, pharmaceuticals - 30.1 % [15; 21]. The basic assets of many American firms today are only 20% of book

value, the other 80% is human capital, which conceals the priceless potential of scientific knowledge and experience, as well as intangible assets - intellectual property objects [27].

New developments in innovative development cause significant changes in the direction of material and financial resources: the focus is on the formation and use of intellectual capital and the efficiency of those stages of the innovation process, in which the development and commercialization of innovations, meaning their transformation into real innovations, takes place. In particular, in the technologically developed countries in the last 10-15 years there is a decline in the volume of fundamental research while the growth of applied research and development, which are able to produce not only scientific and technical or economic, but also market effect.

In this case, the activities of the state, as the most influential institution, should, in our opinion, be carried out in two complementary scenarios:

- first scenario involves targeting the tasks of ensuring the progressive structural changes in the economy, changing the correlation between technological structures. Using for these purposes a number of state regulation tools, namely, scientific and technical forecasting, development of state scientific and technical programs, which include planned tasks for state institutions and government orders for non-state business structures on mutually beneficial terms;

- and secondly, the creation of an optimal mechanism for combining market and state levers of influence on innovation processes. It is advisable to phase out the functional approach to solving the problems of the development of high technologies both from the supply side and from the demand side, which is insisted on by researchers [9; 11] and the transition to program-targeted management. An objective basis for this is the changes in the nature of the emergence of high technologies (diffusion of knowledge and skills of industries, software synthesis of communication interactions) and the results of their use (cross-sectoral shifts, the formation of new opportunities for the use of innovative technologies, the innovative new features of innovative products).

The main preconditions for the formation of the modern policy of the innovative countries, according to experts, is the formation of information technology and economic structure, which was

characterized by high integration potential and accompanied by displacement under the influence of NTP landmarks of internationalization from the sphere of circulation in the field of science, technology, production, the output of general and interindustrial specialization and co-operation beyond national economies [12]. Economic internationalization has accelerated the integration of innovative systems, contributed to the growth of the European economy. So, if in the 70s of the last century the social productivity per capita in Europe was only 60-70% of the US figure, then at the beginning of the 21st century, labor productivity in these regions almost equaled. The industry of high technologies, the production of science-intensive products grew ahead in Europe. The EU countries account for 32% of world communications (US - 33%). In the aerospace industry and telecommunication technologies, there is a satisfactory balance of costs and profits, in the amount of 6.2 and 2.4 billion US dollars annually. Europe is a global leader in some areas of science and technology, in particular in the field of energy saving technologies, with a share of 3.5%, but the United States is the birthplace of radically new innovations in rapidly growing markets, whereas Japanese firms have advantages in certain industries [20]. Lack of Europe from the USA and Japan in high-tech industries, in particular information technology, European countries seek to overcome through the support of innovation, using a large arsenal of methods and tools, including financial ones. In this regard, the study and use of the experience of the EU countries in the development of national innovation systems, and especially their interaction in the process of technological transformation, is needed.

The state should analyze the advantages and opportunities of developing a system for regulation and stimulation of the innovation component of the competitiveness of the national economy. The following are the main factors of the country's competitiveness united in a single system by M. Porter – the author of the theory of international competition – who called it “national house” [1; 17]. According to Mr. Porter, it is based on the conditions of national development (primarily in those areas that determine the technological advantages of the country), the characteristics of demand for innovation, the current state of affiliated and supporting industries and firms’ strategies in different market structures. In this regard, the growth of demand for

innovative products, creditworthiness of end consumers and enterprises are important for Ukraine. The development of venture capital mechanism will allow make a gradual redistribution of the effect of economic growth on the formation of an innovation-oriented economy.

Potential opportunities for such changes are created as the positive dynamics of the introduction of new technological processes and new manufacturing techniques restores in 2006-2017 (Table 6.5).

Globalization processes as well as modern information and technological innovations had a significant impact on the competition not only on externally, but internally. The functioning and prospects of the development of national markets have become, to a large extent, dependent on the ability to create and use scientific ideas, knowledge, innovative products and technologies.

By the share of enterprises that implement innovation, Ukraine is significantly inferior to innovative leadership countries, in which the share ranges from 40 to 70%. It should be noted that during 2000-2016 the share of industrial enterprises that introduced innovations in Ukraine was constantly changing, as evidenced by the following data: in 2000, their share made 14.8% to the total number of enterprises whereas this figure was 10.8% in 2008; in 2016, 16.6% of the surveyed industrial enterprises implemented innovations (or 88.1% of innovative industrial enterprises). They introduced 4139 innovative products, of which 978 were exclusively new to the market, 3161 were new only for the enterprise. Of the total number of products introduced 1305 were new types of machinery, equipment, devices, etc., of which 22.3% were new to the market. The largest number of innovative types of products have been introduced at the enterprises of Zaporizhzhya, Lviv, Kharkiv, Dnipropetrovsk Regions and Kyiv. According to the types of economic activity, the largest number of innovations were introduced by enterprises producing machines and equipment, not attributed to other groups, food products, metallurgical production [8].

Table 6.5

Introduction of new technological processes and new products manufacturing techniques

Year	Innovative enterprises, %	New technologies and processes introduced	Including low-waste, resource-saving tech processes	New manufacturing of innovative products	Including new equipment
2000	14.8	1403	430	15323	631
2001	14.3	1421	469	19484	610
2002	14.6	1142	430	22847	520
2003	11.5	1482	606	7416	710
2004	10.0	1727	645	3978	769
2005	8.2	1808	690	3152	657
2006	10.0	1145	424	2408	786
2007	11.5	1419	634	2526	881
2008	10.8	1647	680	2446	758
2009	10.7	1893	753	2685	641
2010	11.5	2043	479	2408	663
2011	12.8	2510	517	3238	897
2012	13.6	2188	554	3403	942
2013	13.6	1576	502	3138	809
2014	12.1	1743	447	3661	1314
2015	15.2	1217	458	3136	966
2016	16.6	3489	748	4139	1305

Source: [13].

Innovation development in technologically developed countries contributes to the formation of similar institutions as well as the unification of legislation. Innovation thus successfully uses the scale effect in marketing, production and innovation management issues not only on the national but also on the global level of economy. At the same time, the institutional environment consisting of informal constraints contributes to the formation of special administrative structures – networks that are derived from it. The creation of a new space of goals, values, resources for business is possible due to the latest information technologies, electronic communication tools; they stress the importance of institutionalizing the European scientific and innovation space in the changes in relations between different countries. Thus, the combination of international economic relations and institutions

ensuring their functioning and implementation, the integration policy and appropriate mechanisms and instruments for its implementation shape the integrating mechanisms of innovation and technological interaction [12].

The effective organization of the innovation process determines the current state and prospects of the development of integration processes as well as determines the possibility of the country's leading position in the world even to a greater extent than the availability of science schools. In this context, the formation of an innovative system, the use of intellectual capital for the transformation of industrial goods market, the increase of the proportion of high-tech competitive products becomes of particular importance for Ukraine – the country with significant scientific and technological potential. The main problem that arises in the process of finding ways to integrate Ukraine into the European scientific and innovation space is within the plane of different levels of technological development of countries, the difference in the structures of industrial production. Thus, share of industry gross value added has decreased in the last period from 40.0% to 30.0%, whereas the share of industrial output decreased from 60.0% to 50.0%. The share of machinery and metalworking declined from 30.0% to 12.0%, the share of light industry had more than 8-fold drop, the electronic industry had a 100-fold decline [11].

The intellectual capital is formed in the process of intellectual work - individual and social activity, productive process of the creation of intellectual product and reproduction of a creative person. In this case, the intellectual product acts as a direct stimulator of creativity, which meets the needs of people arising during the intellectual products' implementation in the market. The development of intelligence economics requires significant financial resources, the volume of which is directly dependent on the level of development of the country. In case of Ukraine, financial constraints require extraordinary efforts and a special breakthrough policy [18], the introduction of effective measures to stimulate progressive structural adjustment of the economy and the effective reform of spheres influencing the reproduction of intellectual capital - science, education, innovation, active

European integration policy. The EU countries have united national innovation systems into a single network to build a more dynamic knowledge-based economy and to achieve global leadership. At the same time, the concept of creating a united research space in Europe has been proclaimed in order to combine the efforts of scientists from different countries. Innovation systems of the EU member states have made huge success, having formed a new world economic center.

As witnessed by the world, nowadays not only economically and technologically advanced countries are increasing the volume of financing of the scientific field, but also EU outsiders, small countries, and even former post-Soviet republics. According to Eurostat, the cost of research and development increased year on year, according to Eurostat, in the following manner: Finland – 13.5%, Greece – 12.0%, Portugal – 9.9%, Ireland – 8.2%, with the average rate in EU for the last ten years at 3.4%. For example, high rates of growth in Finland's financing of research led to GDP science intensity ratio increase from 1.5% in 1995 to 3.2% in 2015 [30].

For Ukraine to achieve more significant results in terms of competitiveness, the accelerated formation of a new intellectual elite - scientists, entrepreneurs, managers, engineering and technical workers, and representatives of financial circles - is required. Economic motivation should be used as methods of direct influence on the participants of the innovation system - a significant increase in wages, the use of various systems of participation in profits from the use of intellectual products, as well as methods of non-material motivation - the ability of full personal realization, talents, continuous professional education of workers, enhancement of the status of intellectual work within society.

The practice of the innovative countries of the world testifies to their constant search for method of realizing investment potential of business, public funds and common finances of the EU, improvement of technological innovations management. The focus on subsidy mechanisms, government procurement of innovative products, the creation of conditions for the development of venture capital funds, the use of the program-target method for the implementation of technological programs and schemes for

co-financing development is far from a complete list of measures applied by EU countries. At the same time, there is a structuring of the European research space, attracting researchers from other countries, including from Ukraine, to the implementation of scientific programs. Nevertheless, the current possibilities for Ukraine's integration into the EU structures should be assessed thoroughly, with this direction of development of international cooperation not absolutized. It should be borne in mind that participation in the scientific and innovation programs of the EU will require significant financing of the respective areas by own means [25].

The business sector is the main sector in all the member states of the EU, where the highest spending on R&D took place (64% of total R&D expenditure in 2014-2015), with the exception of Estonia, Greece, Cyprus, Latvia, Lithuania (where the higher education sector was dominant in R&D conducting) and Romania (where almost half of R&D was conducted in the public sector). The share in R&D expenditure in the higher education sector was 23%, in the public sector - 12%, in the private non-profit sector - 1%.

In 2014-2015 the highest share in R&D expenditure, conducted in the business sector (77%), was in Ireland (73%), Hungary (72%), Belgium and Austria (71% each), Germany and Finland (68% each), Sweden (67%), Bulgaria and France (65% each), Denmark and the United Kingdom (64% each). Compared to 2004, the share in R&D expenditure, conducted in the business sector, increased in sixteen member states of the EU and decreased in twelve.

The highest share in R&D expenditure in the public sector was in Rumania (43%), Luxembourg (29%), Slovakia (28%), Greece (27%), Croatia (26%), Bulgaria (25%), Latvia and Poland (24%); in the higher education sector - in Cyprus and Lithuania (53%), Portugal (45%), Estonia (44%), Latvia (41%) and Greece (38%) [30].

But it does not mean that there is no means of innovative projects funding at the expense of external sources: as the driving force of globalization to a greater extent becomes the international capital movement in the form of direct and portfolio investments, crediting and financing of the production of high-tech products and goods. The main subjects of direct foreign investment are TNCs, which have a wide range of opportunities for FDI placement.

The rapid growth of the TNC affiliates network in the world testifies the following data: if after the Second World War TNCs created about 100 foreign affiliates per year, now they create almost 1000 times more. There are more than 800 thousand foreign affiliates in the world, owned by 63 thousand financial companies. 270 thousand branches are located in the developed countries of the world, 360 thousand - in developing countries, and 170 thousand - in countries with the economic transformation. Today, TNCs control 80% of the global technological potential in the private sector, nearly the same - in trade [30].

The financial and economic magazine «Forbes» published a list of 500 successful corporations of the world in 2016. Of these, the largest number is in the United States (174 companies), China (51), Japan (43), Great Britain (30) and France (26). TOP-10 was extended by Germany (22), Switzerland (15), India (13), Canada (13) and South Korea (12). Within the EU, more than 140 firms hit the rating of leading corporations, but there is no countries that joined the EU in 2004 [32].

The experience of the new member states of the EU shows that foreign affiliates have become an important source of innovation production. In particular in Hungary, Poland and the Czech Republic, research and development are closely linked to industry, innovative technologies and products for regional or global markets.

The main reasons for increasing activities of TNCs are the possibility of turning investments into intangible assets in the form of patents, technical knowledge, copyrights, trademarks, which are easier to transfer from one country to another than tangible assets, where they, in favorable conditions, rapidly transform into additional production capacities for relatively low cost. At the same time, the deployment of TNCs in other countries causes the need to adapt technology to local needs, create conditions for the implementation of their products in new markets. In many cases, the integration of innovations requires R&D internationalization, which significantly influences the integration of economic relations in the field of high technology, production of science-intensive products. After all,

the aggravation of international competition, rising costs of research in connection with the increase in their complexity necessitates the dismemberment of the innovation process, the deepening of specialization. In many cases, a significant role in the strengthening of integration processes becomes acute in the need for highly skilled scientific and engineering staff. This gives Ukraine, which has maintained significant scientific schools, additional opportunities to participate in the internationalization of innovation activities.

At the same time, the innovation development policy, focused on the deepening integration with TNCs, the use of foreign direct investment and R&D are exposed to significant threats for host countries, namely:

– there is a potential increase in domestic innovations, if they are of no interest of TNCs or they are competitive with respect to foreign development;

– various forms of motivation of scientific personnel, developers, differences in the levels of payment and stimulation of innovations for domestic and foreign partners;

– the efforts of host countries to keep under their control copyrighted knowledge in the reverse effort of TNCs to use them to the fullest extent [20].

The need to rethink the economic policy regarding the use of innovation in order to increase the competitiveness of the national economy in world markets, the increase of innovation and export potential take on special significance in the context of globalization, the search for ways to establish Ukraine in the world division of labor as a high-tech state capable of cooperating effectively in the scientific and technological sphere and the production of science-intensive products with a high share of value added.

In modern conditions, the leading countries of the world have created and constantly develop national innovative systems, which combine science, education and science-intensive production, and in which innovations are implemented. Due to the introduction of state-of-the-art technologies in these countries, almost 90% of GDP growth is provided by such catalysts of innovation development as technology parks, innovation centers, other research and development firms, venture funds, business incubators. Significant

support for innovation is provided by TNCs, whose investment activity has created not only the conditions for effective national development but also quantitative and qualitative changes in world economic development.

The national innovation system is not subject to rapid restructuring, since it is based on the principles of an administrative, centralized economic system, its reformation requires financial and institutional support on the basis of a combination of state regulation and market stimulation of innovation development, the development of innovative infrastructure that can systematically cover all stages of the innovation process. In particular, the system of venture financing can positively affect the formation of entrepreneurial entrepreneurship. But its low level of development in Ukraine is explained by the fact that there is a lack of legal support for organizing innovation activities both in corporate form and in the form of small innovative business structures, a lack of domestic capital and a lack of significant incentives for institutional investors. As a result, according to the estimates of the Ministry of Economy, the total volume of the market of venture capital is now only $400 million, which is about 1% of annual revenues to European venture capital factors [1; 17].

In conjunction with the lack of a clear strategy for the creation of new high-tech products based on the achievements of its own scientific and technical potential, this causes a delay in the establishment of the necessary structures for the effective functioning of the national innovation system. Almost innovative projects are implemented only by individual technological parks. At the same time, despite the fact that they are implemented on the strategic priority directions of innovation activity, the state does not provide financial support to technological parks. The institutional environment, the regulatory framework, and the lack of effective infrastructure have a significant negative impact on scientific, technological and innovation activity. Thus, the imperfection of the regulatory framework resulted in the constant non-compliance with the norms of the articles of the current laws on financing and stimulation of scientific, technical and innovation activities.

Therefore, the overcoming of institutional uncertainty in the development of an innovation-oriented economy requires the growth of the role and responsibility of state institutions in creating legislative and organizational and managerial perspectives

for the development of the national economic system. Without a systematic solution to institutional problems, the combination of formal and informal institutions for the development of innovation, the spread of innovation activity at all levels of the socio-economic system it will not be possible to achieve competitive advantages in a globalized world . Understanding the fundamentally new role of the state requires the abandonment of unjustified provisions of liberal theories, the development of a strategy for changing the role of the state as the most powerful institution in the formation of an innovation-oriented economy.

This makes it possible to draw a general conclusion that the modernization of innovation development mechanisms should provide for the improvement of the functioning of national innovation systems by encouraging innovations and ensuring a steady demand for innovation, and an increase in returns on intellectual investment made by foreign capital. The application of preferential tax and credit support to innovative enterprises, that are capable of producing and selling high-tech products on the world and West European markets, is the matter of topical interest. It is advisable to apply the structure-forming policy of investment priorities in the field of innovation integration, to subordinate the external borrowings of the state to the structural policy, and to subject foreign and domestic investments to innovative development. The growth of the newest technologies can lead to a significant activation of integration processes, bring the innovation system of Ukraine closer to the parameters of the innovation systems of the EU countries.

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CHAPTER 7

FINANCIAL INSTRUMENTS FOR THE DEVELOPMENT OF THE WORLD TRADE INNOVATIVE SPHERE

Ruslana S. Bilyk

World economic development in modern conditions is accompanied by the tendencies of deepening of the international division of labor and, respectively, strengthening of integration processes under the influence of globalization and, at the same time, intensifying competition in the world markets of knowledge-intensive, high-tech products. This rivalry unfolds among countries with innovative economies and other catching-up and developing economies. Innovative economy is characterized by significant dynamism, structural adjustment, change in the position of leading companies, the disappearance of enterprises with outdated technology and the emergence of new ones, using modern scientific ideas and innovative developments. At the international level, innovative economies are engaged in the accelerated development of new markets in other less developed countries and in the world technological environment. This exacerbates the issue of national economy competitiveness, resulting in searching the ways to develop technological cooperation between countries with different levels of innovation activity, and to ensure mutually beneficial participation of countries in the world economic space.

Globalization processes are developing in quite a contradictory manner in terms of their nature of manifestation and their deepening influence on each national economy, as well as and on the course of world economic development as a whole. On the one hand, globalization promotes the extension of the exchange of goods, services, information, innovative technologies and other resources among the states and the receipt of benefits from deepening their participation in the international division of labor system. In this respect, globalization means a process of revitalizing domestic (internal), scientific and technical, innovation and investment activity.

On the other hand, globalization poses significant threats to the independent self-development of the country's economy. After all, greater international competition can contribute to the concentration of

capital, finance and investment and intellectual resources only within a limited group of highly developed countries. As international competition grows, they increasingly make the use of the acquired benefits, thus, creating a real threat to those countries where scientific, technological and innovation activity is not based on such a powerful foundation.

As one of the main factors for increasing the competitiveness of the national economy and expanding its export potential, the implementation of technical and technological re-equipment of any production, as well as the introduction of modern innovative technologies requires significant investment investments. Experts estimate the volume of investments required to fund only first-priority innovative and investment programs in Ukraine at about $50-60 billion, which will continue to have a multiplier effect. As far as the source of innovation support is considered, then, according to the economists, at least 5-10% of GDP is annually required [13].

Investment in the innovation process is one of the key factors. The success of innovation activity depends largely on the sufficient resources provided, including the investment security. Eventually, the innovation development depends precisely on the success of the involvement of the latter.

However, questions arise namely on the sources of financial resources, on the instruments of their engagement and on the conditions under which such involvement will take place in a sufficient number.

The rapid economic growth of the modern world is impossible without the introduction of innovation and broad integration. The development of the world economy through production reorientation for the export of high-tech products led to the global innovation market increase in its volumes to $2 trillion. 500 million dollars per annum, of which almost 40% belongs to the United States, about 30% - to Japan, 16% to Germany, and 0.1% to Ukraine. The exchange of scientific and technological achievements over the last decade has grown more than ten times and has become an independent sphere of economic relations that can influence economic growth. Seven of the world's most advanced countries, with 46 macro-technologies out of 50, hold 80% of this market. Up to 80% of all patents and licenses for technology, technology and know-how are controlled by multinational corporations. In the total volume of world patents, our state owns less

than 1%. At the same time, Ukraine occupies 2.6% of the world market of weapons, which indicates its significant high-tech potential [12; 19].

For countries with emerging markets, and in particular Ukraine, which recognize the need to support the innovation approach of economic development and are only on this path, the issue of finding sources of financing for innovation and the use of modern financial methods and tools is becoming relevant. The introduction of research and development (R&D) into production, international technology transfer is risky and requires significant financial resources, therefore the need to use the most effective financial instruments, especially in external financing, becomes of particular importance.

For the emerging market economies, and for Ukraine in particular, which recognize the need to support the innovation approach of economic development but only start following this way, the issue of finding sources of financing innovation and the use of modern financial methods and tools is becoming relevant. The introduction of research and development (R&D) into production, international technology transfer is risky and requires significant financial resources, therefore, the need to use the most effective financial instruments, especially in external financing, becomes of particular importance. At the same time, one of the negative consequences of attracting foreign investment into innovation activity is the loss of a significant part of the profits from entering the market of innovative technologies. Under such conditions, it is important to use the positive experience of other countries in attracting foreign investment in innovation activities.

Objects (innovative technologies) of the world and international markets of technologies take the form of either commodity or non-market type. In other words, the movement of technology is performed in two forms: commercial (market) and non-profit (non-market). The main place in the commercial transfer of technology belongs to the indirect trade agreements and sale and purchase contracts of the patented technologies (means of production and consumer goods), which are the objects of the world market of goods (services).

Goods are classified according to the level of Research and development intensity of trade (R&D intensity) developed by UNCTAD - the share of research and development costs in terms of their production and trade. Thus, in the OECD countries, certain products are considered as highly technology-intensive, such as aerospace equipment

(22.7%), computers (17.5%), electronics (10.4%), drugs (8.7%), etc.; medium technology-intensive products refer for cars (2.7%), chemicals (2.3%), various industrial products (from 1.6% to 1.8%), etc. Low technology-intensive products are building materials (0.9%), food products (0.8%), vessels (0.6%), ferrous metals (0.6%), textiles, clothing, footwear (0.2%). In general, the average R&D intensity for the first group of goods is 11.4%, the second - 1.7%, the third - 0.3%. There are other qualitative criteria for assigning products to high-tech (knowledge intensive), such as the proportion of the employed in the R&D (not less than 2.5% of the total number of employees), the achievement of world-class quality of products, high export quotas, the use of hi-tech technologies, etc. [10].

Under the influence of global processes, Ukraine's investment and innovation policy is gradually changing. However, the investment and innovation potential of the country, its regions and enterprises and the possibilities for its transforming into different forms of capital are not fully utilized today. Judging by the structure of Ukrainian exports, the production clusters in Ukraine that are competitive on the world market almost do not exist.

The export potential of the state is determined by the volumes of goods and services that can be produced in the industrial, economic, social spheres and can be realized in the world market with the maximum benefit for the country. Ukraine is well-known of having significant export potential, which is concentrated in the mining and processing industries, as well as in the agro-industrial and energy complexes of the country. However, it is rather inefficiently realized, thus, it is developing insufficiently.

Considering the data on the structure of Ukraine's gross domestic product (GDP) for its end-use in recent years, one can also see the dynamics of the balance of exports and imports in Ukraine (see Table 7.1).

Data analysis in table 7.1 shows that for the period from 2004 to 2016, there is a steady development trend when together with the growth of export-import transactions, imports into Ukraine in recent years have been chronically outstripping exports, and sometimes their difference sometimes can reach 8% of GDP. Thus, only in 2016 the volume of Ukraine’s exports of goods and services amounted to $ 44885.4 million, imports - $44548.1 million. As compared with the year

2015, exports decreased by 4.1%, imports increased by 3.7%. Foreign trade surplus amounted to $337.3 million (in 2015 foreign trade surplus reached $ 3828.2 million). The export coverage ratio equaled 1.01 (0.81 in 2012).

Table 7.1

Foreign trade balance of Ukraine for 2004 - 2016

(in millions US$)

Years	Nominal GDP for the year	exports of goods and services		imports of goods and services		balance (exports – imports)	
			% GDP		% GDP		% GDP
2004	64928	37980	58.5%	31055	47.8%	+6925	10.7%
2005	86309	40422	51.5%	39076	50.6%	+1346	+0.8%
2006	107753	45874	46.6%	48754	49.5%	-2880	-2.8%
2007	142719	58287	44.8%	65651	50.6%	-7364	-5.7%
2008	179382	78744	46.9%	92002	54.9%	-13258	-8.0%
2009	117152	49301	46.4%	50610	48.0%	-1309	-1.7%
2010	136420	63190	50.7%	66188	53.7%	-2998	-2.9%
2011	165239	82107	53.8%	88855	59.2%	-6748	-5.4%
2012	176308	82337	50.9%	91364	59.3%	-9027	-8.4%
2013	182026	78148	46.9%	84573	55.4%	-6425	-8.5%
2014	130805	64106	49.2%	60750	53.2%	+3356	+ 2.8
2015	90524	46804	52.8%	42976	54.8%	+3828	+3.3
2016	93812	44885	49.3%	44548	55.5%	+337	+0.3

Source: [3]

The study of the structure of foreign trade shows low export performance of high-tech (innovative) goods and services in Ukraine. This reflects the imperfect structure of the competitive advantages of the Ukrainian economy that is based primarily on price factors and comparative advantages in the cost of natural resources and labor force. At the same time, available high-tech capabilities of the enterprises of the certain Ukraine's industries and regions are not properly utilized.

The development of production of goods with high added value is a top priority in creating a base for increasing volumes and improving the structure of Ukrainian exports in order to increase the proportion of high-tech goods in it. National interests require domestic and foreign investors to create new, above all, hi-tech and knowledge-intensive, import-substituting and export-oriented enterprises [15]. If Ukraine is

able to attract such investors seeking efficiency and knowledge, the competitiveness of its economy will increase significantly and the country will receive additional national competitive advantages.

More indicative and qualitative specification of condition of the foreign commodity markets in the processing industry and, in particular, of the engineering is the dynamics of its structure at the technological level. The growth and effective use of innovative potential is the most important factor that determines the long-term trend of the competitiveness of the national economy. At the same time, in the structure of Ukrainian export of industrial products throughout the analyzed period, unfortunately, there were no qualitative structural changes in the direction of raising its level of productivity.

In recent years, the share of high-tech goods in the total volume of commodity exports fluctuated at 2.7-7.3%, and did not exceed 3.6 % since 2013, while the remainder accounted for the raw material share of exported goods. In the export quotas of developed and new industrialized countries, the share of high-tech products is higher. The "high-tech breakthroughs" of Ukraine, such as the four-sided space project "Sea Launch", production and delivery to Pakistan of the latest tanks, integrated engineering project of aircraft construction together with Iran, seem to be large on their scale but not vast in the amount [16; 19].

This situation confirms the low level of technological and innovative competitiveness of Ukrainian economy. The annual growth of the volume of high-tech exports in value terms took place in 2005-2008 and in 2010-2013. In the period from 2014 to 2016, the volumes and the share of exports of goods with a high degree of processing decreased. In 2014-2016, the export of goods by the commodity group "Machines, equipment and mechanisms; electrical equipment" dropped by 55%. Such a reduction is largely due to the military aggression of Russia that used to be the main trading partner of Ukraine. In the structure of the export of Ukrainian high-tech products, the goods of the aerospace industry, electronics and communication equipment traditionally dominate. The deformations of Ukraine's foreign trade are also observed in the significant prevailing of import over the export of high-tech goods; the export coverage ratio for these groups of goods in 2014-2016 was 0.61 [3].

Thus, the unique characteristic of the structure of Ukrainian export remains its commodity dependence that determines the high level of dependence on fluctuations of the world market. At the same time, the maintenance of positions on foreign commodity markets is ensured by the excessive exploitation of natural resources, the use of cheap labor, as well as due to the favorable geographical location and developed transport infrastructure. In the commodity structure of imports, the key commodity group is mineral products, more than 95% of which belongs to energy materials. In 2014-2016, more than 40% of this import group consisted of oil and petroleum products and almost 35% of gas. This confirms the high level of Ukraine's dependence on imported energy sources, which threatens the national security of the state. The structural and dynamic analysis of import of goods also captures the significant dependence of the national economy on the import of products from the machine-construction and instrument-making industries. The share of imports of this product in total exceeds 20%. In general, during the last 10 years, with the exception of crisis periods, the volume of imports of this product group has been growing year by year.

The share of medium technology-intensive products shows no tendency to grow and does not reach 24%. At the same time, the share of low-tech and medium-low-tech industries accounts for two thirds of the total volume of export supplies of industrial products. In the last two years, there has been a tendency towards an increase in the share of low-tech manufacturing, due to the reduction in the share of medium-low-tech manufacturing, which relates to the decrease in the export of metallurgical production [3].

The experience of some countries in the world, for instance, the USA, European countries, Japan, South Korea, China and others who have successfully developed their innovative investment potential and attracted foreign innovation technologies, has shown that the Government's innovative policy has played a key role in this process. This policy were aimed at finding ways to increase the efficiency of national innovation systems (NIS) through building up its own resources, especially human resources, and creating an effective institutional framework to stimulate national companies to innovative activity. Effective implementation of such a policy requires a long-term strategy. A country that only passively expects the arrival of new

modern technologies from other countries will have a disadvantageous competitive position in comparison to those countries that are active in adaptive and institutional policies [5; 14].

In countries that have a strong R&D segment in their R&Ds, effective government policies are employed including the active promotion of technology, know-hows, human and investment capital from other countries. In some countries, government policy is aimed at stimulating the attraction of foreign direct investments (FDI), while others are joining R&D through contractual arrangements. First of all, in these countries strategic investments are directed on the development of human resources of the R&D through the continuous improvement of the education system; on the promotion of the migration of highly skilled specialists; on the development of the infrastructure of science parks, state research institutes and laboratories, incubators (as means of promoting innovation in foreign and national companies as well); on the stimulation of the implementation of international technical standards and incentives as a part of the overall strategy for attracting external finance for the targeted sectors of the economy; on the strategic implementation of the system of protection of intellectual property rights [18].

The situation in the western countries is significantly different from the Ukrainian one. The special interest in the development of innovation lies in the experience of the countries of the European Union, the USA, Japan, Canada, Israel. The core of this system is the R&D, the implementation and international transfer of the latest technologies on the basis of various sources of financing and the use of financial instruments for this purpose such as preferential crediting and taxation, insurance and direct financing of innovative business (see Table 7.2).

One of the main goals of the EU over the past decade is to increase its competitiveness through grown investments in the scientific sphere. The Lisbon Strategy sets the target: 3% of GDP should come from research and development. Although this goal has not been achieved by 2010, it remained one of the five key tasks in the framework of the Europe 2020 strategy adopted in 2010. In order to provide appropriate incentives, innovative enterprises are created with special institutes such as ministries and departments, technical and technological funds, techno-park structures, commercial banks, insurance funds, etc. The activities of these institutes are based on

the laws of support for innovative business, the protection of industrial and intellectual property [4].

Table 7.2

A share of financing the research and development costs at the expense of various sources in the total gross of charges in 2014-2015 (according to Eurostat)

(in % of the total gross of charges)

Country	Corporate sector	Public sector	Higher education sector	Private nonprofit sector	Funds of foreign sources
EU 28	55.3	32.3	0.8	1.6	10.0
Bulgaria	22.3	26.4	0.5	0.4	50.9
Estonia	41.0	46.4	0.2	0.2	12.2
Spain	46.4	41.4	4.1	0.7	7.4
Latvia	20.1	32.7	2.2	0.0	45.0
Lithuania	28.0	35.6	1.5	0.3	34.6
Germany	65.8	28.8	0.0	0.3	5.0
Poland	39.0	41.8	2.2	0.2	16.7
Romania	37.3	41.7	1.7	0.1	19.2
Slovakia	25.1	31.9	3.3	0.3	39.4
Slovenia	69.2	19.9	0.3	0.0	10.6
Hungary	49.7	34.6	0.0	0.7	15.0
Czech Republic	34.5	32.2	0.7	0.1	32.5
Ukraine	39.6	40.1	0.2	0.1	22.1

Source: [26].

At the present stage of the Ukrainian economic development, an objective need to intensify innovation and investment activity has arose, as it is the decisive element of the whole economic policy of the state, which ensures stable economic growth of the country, strengthens export potential and innovative competitive advantages on the world markets. At the same time, significant structural and technological changes in the economy, market and communication infrastructure require strong financial support. Therefore, in the context of the limited investment resources, the problem of determining the priority and efficiency of their use is very relevant.

A significant disadvantage of the national regulation system for the development of innovative investment sphere is that Ukrainian legislation (unlike the legislation of most countries of the world) not only fails to contribute to the expansion of sources of financing the innovation and investment development, but also counteracts the attraction of non-budgetary funds and prevents the formation of special, in particular departmental, funds for innovation. This has greatly affected the attitude of the corporate sector to the financing research and development. Even where such funds were initially created, their costs were included into the state budget. Today the position of the corporate sector in financing the R&D and the state's attitude towards it are the main reasons why the private sector's spending on researches are continuing to decline. At the same time, as the world experience shows, accumulation of own funds is a rather long process. Respectively, the updating and introduction of technologies are slow. Therefore, in practice, external borrowing is often used to significantly accelerate the process of innovation development [6; 7].

In Ukraine, this situation has led to the fact that, according to the calculations of scientists, almost 70% of the funds for scientific and technological developments is for IV, and only 23% - for V technological paradigms, 60% of innovation costs - for IV technological paradigm, 30% - III, and for V - only 8.6%. Consequently, the negative processes in the general structure of production apply to the degradation of the technological structure of existing enterprises, affecting the reduction of export potential [19].

The strategy of innovation development of Ukraine for 2010-2020 in the context of globalization challenges indicates the innovative development of the economy of the state and its individual regions as a priority. In current market conditions, the task of determining the internal reserves of economic development becomes relevant; the solution of this issue is associated primarily with the development of new approaches to the definition of the essence and structure of the state economic potential and its innovation and export component [15].

Public administration and regulation of innovative development involve the application of a system of measures aimed at creating conditions for the formation of a stable market demand for innovation, at promoting the development of a competitive environment and institutes of the national innovation system. Financing plays

an important role in the provision of innovative processes, being rightfully considered as: 1) the economic category; 2) the form or method of management; 3) a system of forms, methods and tools for the use of financial resources [21, p.133].

The issue of funding of innovation-oriented economies has a complex background, related to the sustainability of the financial sector, the use of non-standard measures of support and strengthening of the influence of financial institutions on innovation. The normative role of the institutional direction of different versions, schools and trends of the financial and economic direction of this theory is intensifying. The increasing interest of scholars in the provisions of institutionalism is due to the intensification of competition in the world economy, the increase in the importance of the innovation component in the competitiveness of national economies [6; 9; 17; 22; 25].

In accordance with the provisions of the institutional theory of the use of financial regulation instruments and management of economic processes (including innovative development), it achieves its highest performance on the basis of a clear understanding and perception of the context of the relations between the society and an individual and the certain functions performed by them. Both the representatives of the traditional or classical research schools (T. Veblen, J. Commons, V. Mittsel, J. Tinberns, etc.) and numerous followers of institutionalism (G. Akerlof, G. Becker, R. Boyer, E. Brousseau, O. Blanchard, O. Williamson, R. Coase, J. Stiglitz, etc) hold such views [21].

Consequently, the innovative development of entrepreneurial activity and foreign trade of high-tech goods requires significant resources, and above all financial ones. At the same time, the main task of the state authorities should be the development and implementation of policies to increase funding for the development, implementation and export of innovative products and technologies. Funding can be provided at the expense of the private funds of enterprises, funds from the state budget, funds of investors, including foreign investors and bank loans.

The main role in stimulating investment and innovation activity, expansion of exports of high-tech products in developed countries of the world is given to the direct and indirect means of state regulation. Direct methods and instruments of financial incentives include granting loans under preferential terms to enterprises and organizations

conducting research; free transfer or provision of the state property and land on privileged conditions for the organization of innovative enterprises; creation of scientific infrastructure in the regions; government orders, mostly in the form of innovation contracts, which are later widely used in the country's economy; creation of scientific and technical zones with a special regime of innovation and investment activity [23].

Indirect methods include tax privileges for the investments in the innovation sector; development of new areas of science; legislative norms that stimulate research activity; deduction of expenses for conducting R&D; investment tax credit; reduction of tax rates, etc. In addition, in world practice, other tax incentives are applied, including tax holidays for a few years on the profit from the implementation of innovative projects; the use of tax zones with special privileged taxation within technological parks, scientific and industrial zones, etc.

The advantages of the indirect state regulation of innovation activity are the objectivity of the criteria for the provision of state support: the implementation of the relevant types of work and the introduction of technological innovations. Among the financial instruments of the indirect state regulation of innovation activity in Ukraine, tax incentives, preferential lending for innovative projects and depreciation deductions should become the most widespread. At the same time, tax benefits need to be closely aligned with other elements of the national innovation system.

In Ukraine, due to the slow growth of the total volume of financing of the innovation activity in industry, the distribution of this volume is characterized by slight fluctuations (see Table 7.3).

Over the period from 2000 to 2016, the share of financing significantly reduced: from the state budget (from 2.8% to 0.7%), domestic (from 1.4% to 0.3%), and foreign investors (from 1.0% to 0.001%) and funding from other sources (from 12.5% to 4.3%). The largest share for the long period is allocated to financing innovative activities at the expense of enterprises' own funds (75.6% in 2000 and 89.5% in 2016). Starting from 2014, the volume of financing of innovation activity in Ukraine has significantly decreased.

In today's conditions in Ukraine, the important issue at the macroeconomic level is the participation of the state in the financial support for the development of innovative entrepreneurship through

such effective financial instruments: subsidies, preferential taxation and lending, allocation of funds for targeted lending and compensation of interest on lending.

Table 7.3

Sources of Innovation Financing in Ukraine for 2000-2016,

mln. UAH.

Year	Total cost	Including at the expense of funds			
		Personal	State Budget	Foreign investors	Other sources
2000	1757.1	1399.3	7.7	133.1	217.0
2001	1971.4	1654.0	55.8	58.5	203.1
2002	3013.8	2141.8	45.5	264.1	562.4
2003	3059.8	2148.4	93.0	130.0	688.4
2004	4534.6	3501.5	63.4	112.4	857.3
2005	5751.6	5045.4	28.1	157.9	520.2
2006	6160.0	5211.4	114.4	176.2	658.0
2007	10850.9	7999.6	144.8	321.8	2384.7
2008	11994.2	7264.0	336.9	115.4	4277.9
2009	7949.9	5169.4	127.0	1512.9	1140.6
2010	8045.5	4775.2	87.0	2411.4	771.9
2011	14333.9	7585.6	149.2	56.9	6542.2
2012	11480.6	7335.9	224.3	994.8	2925.6
2013	9562.6	6973.4	24.7	1253.2	1311.3
2014	7695.9	6540.3	344.1	138.7	672.8
2015	13813.7	13427.0	55.1	58.6	273.0
2016	23229.5	22036.0	179.0	23.4	991.1

Source: [8].

The state can and must play an important role in the organization and financing of SRPs for the development of new technologies for small and medium-sized companies, which often lack their own resources. However, public policy cannot be effective without a clear understanding of the market and the peculiarities of the national industry. The level of state financing of scientific, technological and innovation activity remains, in our opinion, extremely unsatisfactory and requires, in view of the crisis of science, an increase by at least 4-5 times. The basis for this may be the formation of a monetary base for budgetary tasks of science development and activation of innovation activity of enterprises [5].

Public funding of science and technology and innovation activities in Ukraine today is quite problematic, since there is a significant deficit of the state budget and a huge public debt. In our opinion, the allocation of funds is possible only after balancing of the state budget and debt reduction. The importance of maintaining the necessary balance is the basis on which to rely. This also applies to the financing of innovations. Of course, the possible option is to direct government borrowing, foremost external financing of innovation. However, unfortunately, this does not happen. For the most part, borrowing goes to cover the state budget deficit [6; 13].

Budget allocations to the development and implementation of innovations are limited to the revenues of the budget system. At the same time, depending on the political and economic conditions in the country, the forms and amounts of budget investments in innovation have significant differences. The budget crisis, which is typical of Ukraine, limits the possibility of state participation in development and implementation of the innovation processes. In 2016, the share of budget allocations in the structure of financing innovative activity in Ukraine (which does not exceed 1.5% of GDP) was about 0.7%, which is equal to the level of 2005 [22; 23].

The reevaluation of the performance of the State Innovation Fund is required, and, if necessary, to restore its functioning. After all, the State Innovation and Credit Institution turned out to be incapacitated. According to the existing estimates, from January 2007 to August 2009, this institution did not have a single loan agreement for the implementation of innovation projects [13].

It is advisable to create regulatory and incentive mechanisms for activating the participation of venture financing institutions through the creation of a network of innovation funds of different models: commercial, non-profit, government and joint with foreign investors. Enhancing the venture business financing through innovative funds will foster the involvement of commercial banks in long-term lending and direct financing of innovation and investment projects. In conjunction with monetary policy measures aimed at increasing of demand from enterprises and the population for innovative technologies and products, raising of the level of capitalization of banking and other financial and credit institutions, this will contribute to strengthening the entire

financial system and will positively affect the development of foreign investment in innovation projects.

The state financial and credit policy of promoting innovation should aim at stimulating an increase in the volume of the own funds of innovative enterprises and the introduction of a complex of instruments of the financial and credit mechanism for the regulation of money circulation, investment and crediting of the innovative activity of enterprises [5].

The experience of the developed countries of the world shows that under the conditions of a market economy the decisive role should be devoted to bank lending of innovation activity, stimulation of the export of high-tech products, due to the concentration of significant volumes of financial resources in the banking sector and the efficiency of bank investments into the real economy. This innovation financing tool is particularly widespread in the EU, due to increased financial and market competition between certain banks and the ability to provide highly liquid resources to potential investors [1; 2].

In modern conditions, the main source of external resources in Ukraine is the banking sector, as opposed to advanced countries of the world, where, besides banking institutions, developed stock market is working and developed mechanisms of financing of innovation are present. Banks, as major financial intermediaries, focus more on lending projects that are less risky than innovation and on lending projects in which one can determine the cash flow or obtain financial security. Innovations have a high degree of risk because of uncertainty. Banks could provide companies with cheap loans for innovative projects, but at the same time receive certain compensation for interest on loans from the state budget. The advantage of "cheap loans" compared with the previous version is that the allocation of significantly less amount of money is required. However, the issue of deficits is present also in this variant. The main factors are cost and time. The lower the cost (interest rate) and longer the term, the more affordable are the loans [17].

The Law of Ukraine "On Innovative Activities" [11] provides certain measures of financial support for innovative activities, for example: full or partial (up to 50%) interest-free lending for priority innovative projects at the expense of budget funds; full or partial compensation from the budget for interest payments paid by the subjects of innovative activities to financial and credit institutions. It also includes

the provision of state guarantees to commercial banks, which carry out lending for priority innovative projects and property insurance for the implementation of innovative projects. In addition, the law provides for the possibility of creating state and municipal innovative financial and credit institutions for the support of innovative activities. Unfortunately, these measures remained mostly on paper in the form of a legitimate plan; the main reason for this is the residual nature of financing innovative activity in Ukraine.

Innovative projects are being implemented in Ukraine, however, their scale is insignificant in comparison to other advanced countries (USA, European countries, Canada, Japan, etc.). Because of that, it is necessary to intensify this process by applying financial and credit mechanisms and tools for stimulating innovation in entrepreneurship and conducting active policy on innovation. It would be advisable to establish a development bank, the main objective of which shall be lending innovations.

In the conditions of high riskiness of innovative projects, significant effect has such tool of indirect financing, as warranting of loans granted to the subjects of innovative business under guarantee cover for determined term. On the one hand, guarantees provide the subjects of innovative activity with extended opportunities for realization of commercial ideas, and on the other hand, allow the creditors to use their own means effectively without the risk of their non-return. Given way of supporting innovative activity gained prevalence in such countries as Germany, France, Canada, Great Britain etc. [24].

As the world practice shows, the system of guarantees and concessional lending to innovative entrepreneurship is especially effective for stimulating the development of small and medium-sized enterprises. It allows obtaining a loan for a considerable period under preferential interest rate to fulfil certain types of innovative activity, in particular, creating new competitive technologies and new kinds of innovative products based on technological cooperation and specialization of individual subjects of small and medium-sized business. France, Japan and the United States serve as a vivid example of the support method of the innovative direction of the country's economic development [12; 14].

An important aspect of the harmonization of state and market mechanisms is the conformity of the organizational structures of

institutional support and forms of incentives with the main organizational structures of the process of making innovations. Thus, in the United States, the Small and Medium Business Administration, National Science Foundation, Federal agencies, the National Network for Manufacturing Innovation and other organizational structures, carry out both the institutional support for the development of scientific and technological activities and the export of innovative products. Well-known forms of incentives are applied namely preferential taxation, investment tax credit, preferential depreciation, subsidies, targeted allocations from the budget, striking out R&D expenses from the amount of taxable income. The consistency and targeted nature of forms of incentives aimed at increasing the efficiency of the technological capital network, technopoles, Science and Technology Parks, quasi-market forms of corporate organization, small innovative firms, business incubators, Science and Technology centres, joint industrial and university research centres, venture firms [20].

The results of the interaction of these and other elements of the national innovation system are as following, namely the functioning of a powerful institutional environment, favourable conditions for diversifying the sources of financing innovation. Unlike in the advanced countries of the world, the nature of the actions of power structures in Ukraine in the field of financing innovation significantly blocks the formation of a favourable institutional environment for innovative activity. Such actions include regulating the process of domestic and foreign investment, the dominance of administrative regulation of entrepreneurial activity, the dominance in the total number of financial transactions of those transactions based on personal relations between government officials, management officials of industrial companies and banks [13; 22].

Critically low level of financing science and education blocks the motivation of scientists and inventors for scientific and technical activities, generates mistrust of the society towards the usefulness of their participation in innovative activities. Changing this situation requires the increase of the state's participation in creating a problem-oriented coordinated system of education, science, innovation infrastructure, the institutional environment for business, stimulating activities for the creation of new technologies and products and their market development.

In addition to direct government funding, today there is a number of alternative methods and tools for financial support and stimulation of innovative activities used in developed countries and mainly implemented through the tax system. In this regard, we consider it useful to examine some of the most effective and widely used instruments of indirect financing of the innovation sphere.

To stimulate the introduction of innovations, the state can effectively use the methods and instruments of taxation. First, through preferential taxation, e.g. the reduction in the profit tax rate for enterprises involved in R&D and their implementation into production. Thus, the tax rate on profit becomes an instrument of influence of the authorities on the innovative development of the state. The possibility of using this tool directly depends on the plans of government bodies to complete the well-supplied state budget.

So, various privileges for joint-stock companies are provided in France. In particular, in the first two years of their activity they are completely exempt from taxation, for the third year only 25% of income is subject to taxation, for the fourth - 50%, for the fifth - 75%, and only beginning from the sixth year, 100% of income is taxed [7, p. 44]. Besides France, favourable tax treatment is also widely used in Austria, Belgium, Great Britain, Holland, Ireland, Spain, Canada, Germany, USA, Japan and Sweden.

By the way, favourable tax treatment may be granted to subjects of innovative entrepreneurship in the form of tax deductions (reduction of taxable income) and tax credits (reduction of the tax liability). An investment tax credit is a reduction in tax liabilities for income tax equivalent to the share of current tax period expenditures directed to finance innovative projects. In Japan, industrial companies are entitled to a 7% profit tax reduction on investment in advanced engineering and technology, and in Canada from 7% to 20%. In Holland, one may deduct part of the investment costs from the taxable profit - about 20-25% [7, p. 38].

In the UK, Ireland, Turkey and France, the size of the tax credit depends on the amount of R&D costs incurred. Thus, in Great Britain the size of the tax credit makes 150% for small and average enterprises and 100% for large enterprises, in Ireland - 20%. In France, tax credits are set at 20% of expenditures on research and 40% of their growth compared to the average for the past two years [21, p. 303].

In the advanced Western countries, such as Austria, Belgium, Italy, Spain, Norway, Portugal and the United States, there are tax credits that are determined depending on the costs incurred by the enterprise for R&D per year. At the same time, in Austria this rate equals 200%, besides, the taxable profit of the enterprise is reduced by further 35% of the R&D costs, which exceed the average level of such expenditures for the previous three years [7, p. 77].

Tax benefits can also be granted to enterprises that are not directly involved in the production of innovative products, but which contribute to the process of R&D and the distribution of the final product. It is possible to refer to the levers of tax stimulation of innovative development such tools which are effectively applied in other countries:

1) deduction of costs for R&D due to reduction of taxable base;

2) investment tax credit;

3) reduced tax rate;

4) establishment of non-taxable minimums for the object of taxation;

5) reduction of the tax component directly in the price of innovative products to reduce its cost;

6) exemption from taxes of grants to scientists and scholarships to scientists;

7) tax exemption from royalties and patent payments;

8) introduction of "tax holidays" for innovative enterprises;

9) creation of favourable tax zones ("harbours");

10) tax incentives in exchange for applying a special coefficient to the basic rate of depreciation [10].

Regulation of the pricing system for resources is also a financial lever of the state. However, one should not forget about the priority of market pricing mechanisms, especially when it comes to stimulating innovative entrepreneurship. Deformation of the market mechanism at the initial stages of the commercialization of an innovative product can create favourable conditions for the formation of a further monopoly in the market.

Among the main direct and indirect financial and credit levers of state support for the innovative development model, it is worth noting:

- government order;

- subsidies to enterprises to recover part of the costs for bank interest and leasing of advanced equipment;

- reimbursement by the state of part of the costs of enterprises associated with the upgrading of skills of workers and certification of products;

- financing of conferences, seminars, fairs with the purpose of attracting investments for subjects of innovation activity;

- exemption from VAT of imported technologies and know-how;

- special fees for non-budgetary funds to support education and science;

- financial and consulting support for technology transfer [23].

The complexity of measures to stimulate innovative development must be observed in all the parts of public life. However, not all tools of tax, depreciation, customs, pricing and credit policy can be used without any restrictions for all innovative entrepreneurs. Targeting should be the main principle of the public assistance, while the corruption component of course must be excluded a priori.

Innovative development of a country and expansion of its export potential are impossible without renewal of the fixed capital in the real sector of the economy. The subjects of innovative business can modernize their own production in order to increase its efficiency with the help of one more instrument of supporting financial innovation activity – the establishment of a preferential depreciation regime, providing determination of special norms for such depreciations. This tool of indirect financing of innovation is widely used in the USA, Germany, Japan and Sweden [14].

The practice of foreign countries indicates an effective means of solving market contradictions of innovative development, when the state takes upon itself the organization of the agency's work based on the principle of “one-stop shop”, allowing an investor to solve all the problems of the investment process in one place. Such decisions are possible when the agency is authorized as investment incentive operator. In countries where “one-stop shop” principle operates effectively, this agency develops recommendations for the Ministry of Economy, accomplishing investment marketing and offers post-investment services [10].

According to some researchers, to increase the efficiency of public investment, one should follow certain principles, such as, financial support should be provided mainly to the enterprises of the cooperated technological chain; state financial injections should accompany

financial flows of private and corporate investors; public funds should be provided under the condition of the return of the invested resources on the basis of results monitoring; the investment process should ensure the expansion of the final sales of products and the self-repayment of innovative projects [18, c. 15]. The state, in our opinion, should take the risk of possible failure to realize the innovation project, and, in case of its inevitability take the right steps to eliminate the negative financial consequences for the agents of the agreement. A preventive system for monitoring all stages of the innovation process should be the basis of state management of innovation projects. Under these circumstances, such tools of state interference as national insurance of commercial risks and free conversion of defense technologies into civilian areas can be used.

As a rule, innovation activity is characterized by a rather high level of uncertainty and risk, and, therefore, the important principles of the innovation financing system are multifaceted sources, flexibility and adaptability to the rapidly changing, turbulent environment of innovation processes.

Theoretically, in a perfect market, equal tax rates for various financial instruments and the absence of regulatory measures, any form of financing for enterprises should not significantly affect the results of its activities and profitability. However, in real conditions, enterprises quite often face various risks, which determines a certain hierarchy of forms and sources of financing, including the use of the financial instruments of the securities market.

In practice, not only large but also small and medium-sized enterprises resort to various sources of external investment, including bank lending, raising funds in financial markets, the use of venture capital (venture funds), etc. The final choice of funding sources depends on the organizational and legal form and the size of the enterprise, the nature of its risks, industry and scope of activities, technological peculiarities of production, the specificity of products, the nature of state regulation and business taxation, connections with markets and other factors.

When financing innovative projects, the implementation of which is associated with a high level of a financial risk and uncertainty of the commercial result, enterprises can use various forms of cooperation,

including creation of venture funds, and conclusion of partnerships at all stages of developing, mastering and implementing innovations.

Under the negative impact of the global economic crisis, the identification of priorities for the financial provision of innovative development becomes extremely important. So, the possibilities of providing loans and budget investments for the development and implementation of innovations are limited by the opportunities of the revenue part of the budget system. Recently, financing of innovation activity has not exceeded 1% of GDP, whereas according to the EU criterion for innovative development, at least 2.5% of GDP should be spent. The limited abilities of the state, concerning support for the introduction of innovations, coupled with an attempt to stimulate innovation from the budget into all the areas, have led to the dispersion of an already scarce resource base [17].

In addition, it should be taken into account, that, according to the widespread international classifier, the category of high-tech products are goods with the cost of R&D expenditures constituting at least 3.5%, if this figure is within 3.5-8.5%, then the goods are in the category of "high-quality", and if it exceeds 8.5%, then they are considered "of the highest quality" [4].

Therefore, the priority of financing innovation should be not a departmental approach, but the one similar to such countries as France, the United Kingdom, the United States, Germany, Sweden. It is a single financing approach for the whole cycle "science-technology-production". This creates favorable conditions for the implementation of the innovation stage, ensures the coordination of actions of various participants in the innovation process, determines the effectiveness of the R&D, the return on investment etc. In order to increase the effectiveness of financial support for innovation in Ukraine, it is advisable to develop a network of centers, interregional and international research centers, following the example of many EU countries [14; 15].

The receipts of foreign investments in the economy sectors of strategic importance, regulated by the investment and innovation policies of the state, determines the investment climate within the country, shapes its investment position, and determines the investment and innovative attractiveness for foreign investment of the enterprises in high-tech industries. When using foreign investments,

the efficiency level of their activities increases. It is explained by their influence on management, in which decentralization of management functions takes place with diversifying responsibility, strengthening control over the development, manufacturing and testing of high technology products and technologies, introducing innovative methods of innovative management [6; 7].

The integrated strategies of the world's leading countries indicate the implementation of the active state support for innovative activities, the orientation of the national economy towards innovative development, the state financial support for innovation processes, the stimulation of innovation through the establishment of the preferential taxation, lending, the development of research and innovation infrastructure, the creation of a favorable investment and innovation climate etc. A similar approach to the development of innovation is typical for the number of developing countries, such as, for example, China and India [7].

The state's participation in the R&D financing is gradually decreasing as the development of innovative products and technologies approaching the final stage of the innovation process. At the same time, each next stage of the innovation process requires increasing costs. Especially, it is observed at the implementation stage, where the need for financial resources is 2-3 times more than the one for scientific and technical research and development. This means that with each subsequent stage of the innovation process, it becomes necessary to include private sector savings in the financing of innovation activities more actively [23].

The mechanisms of financial incentives have a significant potential for a positive impact on triggering innovative factors; innovative development used in foreign countries, and, in particular, in the EU member countries. The set of methods of financial regulation and stimulation of innovation activity is divided into direct regulation in the form of irrevocable financing and lending priority directions of innovation activity from budgetary and specialized off-budget funds and in the form of direct tax and customs regulation. The possibility of their use in Ukraine's European integration strategy requires the formation of continuously operating mechanisms for the enterprises to secure legally their other achievements, including foreign ones. This will allow changing the ratio between spending on science and innovation,

facilitating the transfer of technology and the commercialization of technological innovations.

It is advisable to create a network of leasing companies, whose main activity would be financial support for small and medium-sized businesses. At the same time, the main attention should be focused on facilitating renewal of the fixed assets of small enterprises implementing innovations, allowing to ensure, at a high level, the fulfillment of R&D orders of MNCs and other foreign partners, to have an extreme basis for applied research, aimed at achieving practical results and solving specific tasks [17].

In order to overcome financial constraints of Ukraine's participation in the EU programs, it is necessary to introduce effective mechanisms for financial stimulation of innovation and technological cooperation of individual projects and scientific and technical programs, activation of innovative investment and the creation of a full-fledged financial market infrastructure. The development of the venture financing system as a form of interaction between non-state national investment companies and various innovative and investment funds of the EU countries and the transnationalization of the leading Ukrainian banks with their activities covering the European region due to the implementation of joint innovation projects becomes of fundamental importance [19].

The use of incentive measures aimed at creating uniformity of benefits introduced in the EU countries and should be introduced in Ukraine can have, in our view, the following results:

• The balanced use of these benefits will have a positive effect on the activation of investment support for innovations both at the expense of depreciation costs and the use of the non-taxable part of the profits of enterprises;

• Will allow using innovative factors to stimulate foreign trade in high-tech products and deepen the European integration policy of Ukraine;

• The use of such benefits is able to cause the distortion of the intellectual labor market within countries, where the work of scientific and technical workers is used, and cause rivalry among the EU countries for a limited number of qualified scientific and technical personnel and increase their outflow from Ukraine [13].

Aiming at attracting external financial resources in transitive economies in the process of market reforms, the development of

national financial markets infrastructure, liberalization and removal of restrictions on operations on them have begun. However, the analysis of openness indicators of market economical systems shows that these countries face the problem of a rational combination of the strategy of internal stabilization and destabilizing influence of foreign economic factors.

On the one hand, modern transformational processes in the financial markets are the reason for many economic advantages (stimulating free movement of capital, increasing investment volume, etc.), on the other, they produce new threats to economic security, the instability of financial markets and the widely spread crisis in the global economy. In today's conditions of increasing imbalances, the financial market does not meet the needs of economic development without periodical strengthening of the institutional base. In this case, the problem is particularly acute in countries with a transitive economy, because they are characterized by the insufficient development of financial market and the lack of proper legal and information infrastructure [9; 25].

According to the experience of many national economies shows, the loan capital and portfolio investments attraction makes sense if there is a developed financial market infrastructure in the country, private economic entities operating in a competitive environment, capable of the efficient use of the funds received and modern innovative technologies for strategic purposes [17]. Due to the practice in the countries of Central and Eastern Europe, direct investments directed to export production can also be a source of instability, as they dramatically increase the dependence of the main macroeconomic proportions and economic policy from external factors for the given economic system.

The strategic directions of development of Ukrainian financial market and its tools are the improvement of mechanisms of protection of investors' rights; the development of the securities market; the improvement of the National Depository System; the development of investment infrastructure. However, the slight volumes of resources rotated in this market do not contribute to the formation of not only effective infrastructure, but also the creation of a developed system of accounting and settlement of transactions, information provision and adequate market perception. As a result, the low level of capitalization, liquidity and competitiveness of the financial market greatly reduces its

ability to integrate into the international financial system, attract foreign investors and expand companies to foreign financial markets [9].

The general level of financial activity of foreign companies in the Ukrainian innovation system development is quite high: the average share of R&D financed from the total expense of foreign investments in Ukraine is more than 20% (this is a high indicator in comparison with the general world practice, since in most countries it does not exceed 10%), a high level of patent activity of foreign companies, which is about 19.0%, that is, Ukraine loses income from this amount because of the commercialization of developed Ukrainian innovations [8].

In the conditions of the general low level of development of innovative activity of Ukrainian enterprises, external financing, on the one hand, plays a positive role in supporting the innovative initiative of enterprises, as well as development of education, science, culture, and social security, but, on the other hand, poses a certain threat to the further development of strategically important segments of the NIS of Ukraine.

For the transition of Ukraine's economy to the innovative way of development, it is necessary to reform the mechanism of its financial support. This mechanism should be based on motivational incentives and a model for providing innovation actors with all the necessary resources to innovate. As many economic entities as possible with free production facilities, information resources, materials and intangible assets should be involved in the process of innovative development. Such a model will contribute to the development of strategically important structural elements of the NIS of Ukraine, such as innovative clusters, technological parks, innovation enterprises, research institutes and laboratories [15].

Thus, the formation of effective management of innovation processes, its strengthening and expansion should begin with a radical improvement of the innovative climate, which means a significant increase in the innovation attractiveness of the Ukrainian economy as a whole. It should be emphasized that the "readiness" of the national economy and society for innovation development consists of a set of factors that lie in the financial, scientific, technical, industrial, personnel, natural resource, social and other fields, but the transition to an innovative model of development without effective innovation state policy is impossible.

To increase the efficiency of innovation processes, it is expedient to diversify financial flows through foreign investments. A sequence of measures to promote their effectiveness should be such an algorithm, that, first, it is necessary to evaluate the results of the liberalization of capital flows. After that, opportunities and future results of certain sectors of the national economy opening to foreign investors are assessed by comparing the flow of foreign capital to the country and the flow of national capital outside the country. For the use of external financial resources, it is necessary to conduct marketing and promote them to foreign markets in order to stimulate the development of national entrepreneurship. The economic justification of joint projects and programs at the sector and regional level and the coordination of the interests of national business and foreign investors become an absolute value.

Thus, for the Ukrainian economy, the following problems are typical for stimulating innovation and investment activity: shortage of long-term credit resources, large shadow economy, instability and imperfect legislation. Therefore, the development of an adequate investment and innovation needs of the tax legislation in the domestic economy is important, as the tax regulation instruments are an important factor in the investment activity intensification of the post-crisis period.

In order to ensure the growth of investment volumes, it is necessary to carry out the structural reforms of the domestic economy that are associated with the creation of a favorable investment climate in the innovation activity field. In view of the limited financial resources in modern conditions, the state should give preference to indirect methods of stimulating investment and innovation processes. After all, the abandonment of innovation policy can lead to the conservation of Ukraine's innovative potential and structural degradation of the Ukrainian economy.

In the strategic plan, the policy of financing innovation-oriented economy should form a long-term basis for increasing the competitive advantage of business entities. At the same time, some researchers emphasize the fact that in a market economy, the state is not endowed with the ability to directly influence even the activities of industries and enterprises of the public sector, where this function often has a limited form of manifestation. The essence of innovation policy of the state is to encourage the development of high technologies, the development and

implementation of innovative programs and products at the level of direct producers, the formation of the institutional environment of innovation and technology activities.

Contrary to the developed countries of the world, where scientific and technological development is carried out in accordance with the principles of a market economy system, a powerful regulatory and legal framework protecting copyright and intellectual property, Ukraine has not yet created a legislative mechanism for using and promoting innovations in foreign markets. The market for intellectual products is not developed well and there are practically no specialists in promoting innovative products as a specific product that blocks the formation of an appropriate institutional environment.

The stimulation of investment in the innovation sector, according to researchers, involves a balanced development of tax incentives for banking and other financial institutions, exemption from taxation of the share of profits of enterprises, which is spent on investing. Unfortunately, the actions of the state are characterized by institutional uncertainty, unjustified variability of legislation, ineffectiveness and non-transparency of government activity, the disregard for the established rules for obtaining privileges by economic entities. Despite the laws passed by the Verkhovna Rada of Ukraine on scientific and technological, innovation activities, other legislative acts, none of the adopted laws determines the conditions for financing high-tech projects or the possibility of real capital market creation.

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CHAPTER 8

INNOVATIVE INFRASTRUCTURE OF THE WORLD TRADE

Anatoliy V. Rybchuk

A characteristic feature of the modern stage of world economic development is the transition to a post-industrial, information economy based on knowledge as a leading innovative resource, since it is the complex of innovative transformations that contribute to the rapid overcoming of the negative effects of the global economic crisis, the provision of a dynamic development of states and the achievement of a higher standard of living of modern civilization. The last crisis has shown incomplete ability of the "invisible hand" of the market, so almost all economists, both theoreticians and practitioners, as well as most politicians, believe that the state remains a key tool for the protection and reconciliation of the interests of the individual and society, the main participant in the process of international cooperation and not only during the crisis, but also at the stage of getting out of it, the economy can not get around without using the tools of state policy. First of all, we are talking about the intensification of industrial policy aimed at continuously updating the technical and technological base of production, the launch of new competitive products, and the effective penetration of world goods and services markets through a well-developed innovative infrastructure.

In the difficult period of system transformation there is a process of destroying former forms of economic activity and the formation of new economic systems, which gradually replace the old ones. As rightly pointed out by I. Svenilson, "the emergence of an economic crisis is possible only in the case when the operation of inefficient production units is curtailed and replaced by more efficient ones" [15, p. 125]. Therefore, the formation and development of a new economic system that is technologically based on innovation infrastructure, not only can overcome a deep systemic crisis, but also bring the country to a higher level of economic development. On the contrary, a state that is incapable of creating and introducing new technologies will be rolled down to stagnation "[16, p. 121]

As the experience of many foreign countries shows, the recovery from stress caused by deep economic crises is often accompanied by the emergence and introduction of new technologies that can increase productivity, produce new products, and introduce new markets. According to O. Jacoby, H. Kastentig and B. Jesob, "the outbreak of a protracted economic crisis is often accompanied by the introduction of new technologies, the use of which contributes to the increase of labor productivity and the creation of new commodity markets" [17, p. 12].

Technological changes determine the structure of industry not only in the national but also on a global scale. There are long-term trends in the world technological development and modern technological advances that dominatively influence the innovative infrastructure, the distribution of productive forces and the nature of management of various types of production activities. The undisputed global leader in the field of innovation is the United States, which continues to dominate on the all major areas of research and development. Over the past 50 years, about 60% of all technical innovations have occurred there, and the advantages of this country in the creation and commercialization of information, military-space, biotechnology and environmental technologies are undeniable.

The main features of innovation leadership policy are:

- ideological setup of the population of a country to achieve a leading position with maximum personal comfort of the individual;
- clear awareness of all levels of government of the need of scientific and technological progress;
- close cooperation between the authorities and the capital in the implementation of large-scale innovative infrastructure projects. Despite the crisis, the US does not intend to give way to its global leadership. Hundreds of billions of dollars are invested in the American science; American companies are very successful in mastering new high-tech markets and industries. The President of the United States has increased the country's scientific budget to 3% of GDP [19].

In 2013, global R&D spending was $ 1,558 trillion. The United States, which is about 1,8% of the world's gross domestic product, and only 2,7% more than the expenditure indicator in 2012. Of this amount, the US accounted for 28,9% (450,3 billion dollars) of global R&D spending, China – 16,6% (258,6 billion dollars), Japan – 10,5% (16,5 billion , South Korea - 4% (USD 6,2 billion), the EU – 22,4%

(including Germany 5,9%, France 3,3%, UK 2,8%), which indicates a significant level of concentration of global R&D in these centers of innovation development. The market for high-tech products is quite static and monopolized - the EU, the US, Japan, China and Singapore account for 2/3 of the world's exports of high-tech goods. At the same time, there is an increase in the share of China (from 3% in 1998 to 22,8% in 2011), with the simultaneous reduction of the US share (from 20,5% in 1998 to 7,3% in 2011), Japan (from 11,4% in 1998 to 6,3% in 2011) and the EU countries (from 38% in 1998 to 31,1% in 2011).

Table 8.1

Countries and firms by the global index of innovation

Place in the Top 50 in the volume of world sales	Place in the top 250 global retailers	Company name and country of base	Sales volumes in e-commerce (millions of US dollars)	Share of e-commerce in total,%	Rate of growth of e-commerce
1	15	Amazon.com Inc. (USA)	6903,0	100,0	17,7%
2	92	JD.com, Inc. (Китай)	10826,8	100,0	66,2%
3	1	Wal-Mart Stores, Inc. (USA)	10000,0	2,1	29,9%
4	46	AppleInc. (USA)	9000,0	30,8	12,5%
5	70	Otto (GmbH & Co KG) (Germany)	8188,9	61,3	7,0%
6	5	Tesco PLC (UK)	52,50,5	5,3	11,0%
7	99	LibertyInteractiveCorporation (USA)	4884,0	47,4	10,9%
8	13	Casino Guichard-Perrachon S.A. (France)	3952,8	6,2	19,4%
9	59	Suning Commerce Group Co., Ltd. (China)	3536,3	21,3	43,9
10	34	Macy's, Inc. (USA)	3100,0	11,1	37,8

Source: [9, p. 31].

In general, the volume of world trade in high-tech goods in 2011 compared with 1998 increased by 2,4 times, or $1,1 trillion. 37% of this

increase was due to increased exports of China and 26% of the EU. In the licensed trade, industrialized countries are dominated by the share of the triad of the EU, the USA, Japan in total royalties and licensing fees remains unchanged: 93,8% (52,4%, United States – 12,4%, EU - 28,9%) in 2005 and 93,6% (the United States - 51,3%, Japan - 13,2%, the EU - 29%) in 2012 [5, p. 114]

Within certain priorities, China expects to enter the first five countries by the number of patents issued and the number of references to scientific publications, as well as to take the leading position in science and technology. Already now, China, India and South Korea have moved from "catching up" to "leading" in certain areas of information and communication technologies (ICTs). Globalization accelerates the global innovation process on the basis of the formation of global telecommunication networks, the growth of the economic use of Internet technologies, the formation of e-commerce infrastructure. Business goes to the Internet, and it is controlled by the one who controls the network infrastructure [8].

The beginning of the third millennium becomes a period of analysis of the huge opportunities of information and communication technologies for humanity and their use in various sectors of the economy and international business. Recent achievements in the development of global information and communication technologies (Internet technologies) have led to the rapid growth of economic activity, called "electronic commerce". The term innovatio is a synthesis of the words investio (wear) and novatio (update). On the basis of the definition, it is obvious that e-commerce is among the innovative technologies associated with information provision of trading operations. E-commerce is an economy that includes all financial and trade transactions carried out through computer networks and the business processes associated with conducting such transactions [10, p. 77].

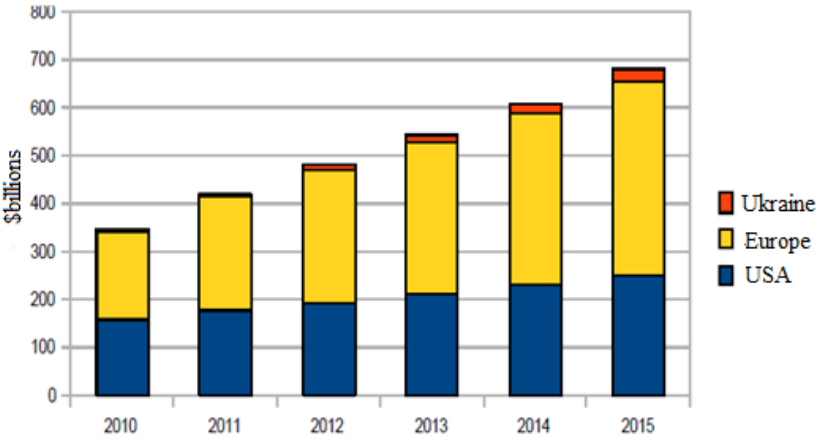

Fig. 8.1. Dynamics of growth of turnover of e-commerce in the period of 2010-2015

Source: compiled by the author.

The development of e-commerce and the increase in its volumes will be accompanied and is already accompanied by a number of positive effects for the world economy. These are the results of the expansion of e-commerce: first and foremost, reducing transaction costs, simplifying trade procedures, expanding opportunities for investment, expanding geography, and engaging in business, increasing competition. The aspects of e-commerce are now one of the most relevant. Currently, the issue of facilitating wider access to international e-commerce is increasingly becoming a priority in the agenda of a number of influential economic and trade organizations, as well as in the documents of state bodies of many developed and developing countries. E-Commerce is developing in two main models: B2B (Business-to-Business) and B2C (Business-to-Customer). This corresponds to the following notion: "servicing legal entities of legal entities" and "servicing legal entities of individuals". Abroad, the e-commerce models of the B2C category were historically the first. In the Internet environment, the usual Mail Order Telephone Order mechanism was moved. The buyer's order was made by filling in the form on the seller's web site, payment of the goods was made on plastic card. After that the goods were delivered by post or courier

service. At this stage of the development of e-commerce there was no language about any payment system through the Internet [12, p. 42].

Western countries are dominated by commercial transactions, payable by payment cards. Not received widespread scheme of payment, built around one bank, in which both the seller and buyers have their own current accounts. Such schemes are called "payment systems". Dominance of payment cards as a means of payment on the Internet is due to their widespread use among the population of developed countries. To date, the US market is the most developed e-commerce market. Therefore, the analysis of the accumulated experience in the field of e-commerce will be conducted mainly on the example of data in the United States, as well as in the Western Europe. According to American experts, there are eight major categories of commerce operations on the Internet. More and more companies in the world use the Network. Buyers with higher education trust the Net more than those who did not graduate from college - 144 points (+ 15%) versus 125 (+ 5%), and spend, respectively, more - at $ 75. Basically, this is true of the United States : the development of retail Internet trade in Europe is still at a rather low level: there, only 35% of online users make online purchases that are a bit, but still more than the same figure last year. The highest proportion of those who at least once tried to make a purchase on the Web, recorded in the UK - 55%. The emergence and development of a global computer network Internet has led to the emergence of new markets, called "virtual". These markets represent a new untapped territory, the size of which is unlimited, and resources at this stage are inexhaustible. The number of computer owners and Internet users is growing rapidly around the world. Their largest number is in the United States, where about 70% of the population has access to the Internet. The market of European users of the Network does not lag behind [2].

According to a recent study commissioned by the company [14], more than half of European companies - 54% - have already implemented web services. The wider distribution of web services is hampered, first of all, by fears about the security of their use - this is what 48% of European organizations halt. In addition, not all pioneering companies are excited about the choices made: one in five of the IT executives interviewed is not satisfied with the results of the use of new technologies, and only 59% of them acknowledged that there are visible

positive results of such implementation - for example, debugging closer ties with clients and partners, increased efficiency, faster and cheaper service delivery. In addition, small business enterprises lag behind the use of e-commerce from large companies: in Britain, for example, 56% of them even "did not think about the benefits of the Web." At the same time, from large firms, 77% use e-commerce technologies, 71% publish an e-mail address and 53% have a website. The Asian Internet market is actively developing. In particular, today the number of users in Japan is more than 30 million people, with more than 80% of enterprises connected to the network. The Internet has become widespread in Hong Kong, where more than 2 million people are connected to the Internet, accounting for 40% of the population aged 12 to 60 years. The growth rate of the number of users in China and India exceeds 100% per year [18].

As we see, a gigantic virtual e-market space is formed, which almost any enterprise can become a participant of. While the geographical boundaries of the states are being erased, globalization of the world community takes place. Changing the economic system, due to the rapid spread of information technology, will lead to new forms of commercial interaction. For the development of their business - by the efficiency of online stores are many times greater than physical analogues. According to research by ACNielsen and Yahoo [18] despite the decline in the economy as a whole and the Internet sector in particular, consumer confidence has grown to the Internet: this past year, the demand index in Western online stores has not changed, and compared with last year, has grown by 8 points, all thanks to the innovative infrastructure of the trade sphere.

E-commerce has been irrevocably incorporated into our everyday lives. Today on the Internet you can buy everything from dishes and cosmetics to cars. And if even a few years ago online trade caused suspicion and distrust, today it is preferred by an ever-growing and larger percentage of the world's population. The global penetration of the Internet continues to grow, especially in Africa, the Middle East, South-East and Central Asia. Every year, the number of owners of mobile devices, such as smartphones and tablets, is increasing, and the number of Internet users is increasing in parallel. Owning these technologies significantly influences the use and development of marketing and expansion of e-commerce infrastructure. Since the latter,

although specific, but nevertheless, a kind of trade, the competition did not bypass her side. In order to attract the attention of consumers and expand their presence in the Internet space, many e-merchants use several online models, including:

- direct sales in online stores;
- online storefronts in third-party online stores;
- conversely, the inclusion of third-party showcases in your own online store;
- sales of products to other electronic enterprises of retail or wholesale trade;
- social networks and e-commerce programs;
- marketing programs where one business sells products to another in exchange for a commission. As there is now a real boom in e-commerce, especially in the emerging market, retailers increasingly view e-commerce as a key element in their global expansion strategies. The opportunity to participate in international e-commerce helps to stimulate the growth of electronic trading platforms and alternative internet channels. The average annual growth rate of the e-commerce market in the world, according to e-Marketer, the main portal for research on marketing, media and commerce, is about 18-20% per year. This is about 10-12% of the total retail in the US and other developed countries; thus, the average world level is about 6-8%. According to some forecasts, the share of e-commerce in general retail will reach 20% in the next few years [9, p. 32]

On the example of the analytical study of the consulting firm Deloitte, one can see how the e-commerce world is rapidly developing as part of the top 50 largest electronic retailers. So, according to 2014 data, the American company Amazon continued to dominate the world of electronic retail sales with a net sales of almost 61 billion US dollars at the expense of an efficiently functioning infrastructure information network.. JD.com, formerly known as Beijing Jingdong Century Trade Co., Ltd. and 360 buy Jingdong Inc., ranked second place with e-commerce sales of around $ 10.8 billions, followed by the world-famous American giant, the largest retail TNC in the world, Wal-Mart and its $ 10 billion in e-commerce sales [9, p. 33].

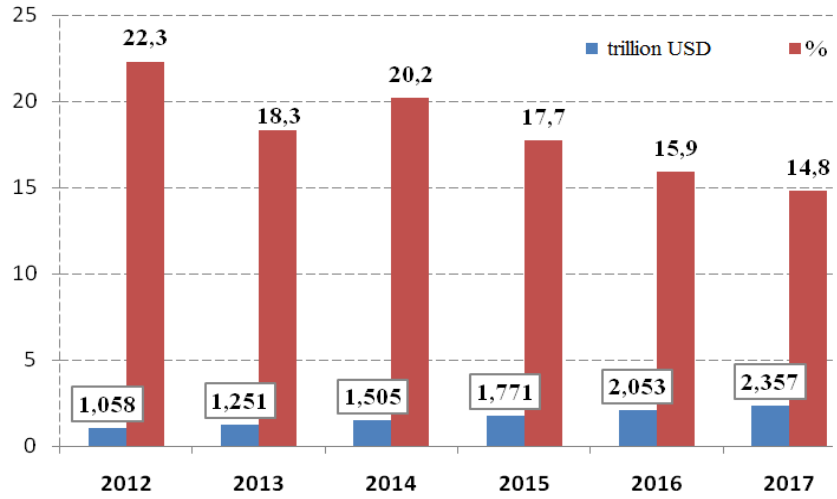

Fig. 8.2. World sales e-commerce, trillion USD,% of changes to the previous year

Source: [15]

The overwhelming majority of the top 50 most powerful electronic retailers, namely 39 of this rating, are multichannel retailers with the off-line stores. With regard to geographic coverage, half of the top 50 companies are based in the United States and Europe (19 companies). And only 5 enterprises are in the emerging markets - 4 in China and 1 in Brazil. On average, the e-sales of these Top 50 retailers increased by 26.6% compared to 2013. At the same time, to economically efficient customer engagement often in unfamiliar territory, the trading floor infrastructure offers sellers a wide range of necessary support services needed for effective business operations - including payment methods, customer service, marketing and promotion.

Alibaba Group, the most popular e-commerce business in China, is well-known, the world's largest e-market, with total revenue of $ 272.8 billion for all sellers in 2014, which is almost double that of the previously mentioned Amazon. Alibaba works exclusively from third-party business model platforms and consists of two major e-commerce sites: Taobao, where consumers sell to other consumers,

and the T-mall, where retailers sell directly to consumers. E-Bay is the third largest electronic market with a total GDP of $ 76.4 billions and offers products only to third-party vendors. In addition, growing online retailers such as Sears, Wal-Mart, BestBuy, and Tesco include third-party trading platforms on their online storefront. By doing this, providing your customers with a much larger range of products and features without having to search them elsewhere, and at the same time, it allows real retailers to earn a significant portion of their revenue from online sales. If you depart from the ranking of the top 50 largest retailers and consider the B2C (end-user business) e-commerce market geographically across regions, then the situation would look like this (see Table 8.2).

Table 8.2

B2C world sales by region, billion US dollars

	2012	**2013**	**2014**	**2015**	**2016**	**2017**
Asia-Pacific	301,2	383,9	525,2	681,2	855,7	1052,9
North America	379,8	431	482,6	538,3	597,9	660,4
Western Europe	277,5	312	347,4	382,7	414,2	445
Central and East Europe	41,5	49,5	58	64,4	68,9	73,1
Latin America	37,6	48,1	57,7	64,9	70,6	74,6
Middle East and Africa	20,6	27	33,8	39,6	45,5	51,4

Source: [9, p. 32]

Based on the data in the table 8.2, it is easy to track the trend towards a rapid set of e-commerce trends in the Asia-Pacific region, where, starting in 2014, consumers began to spend more on online shopping than residents of North America, making it the largest regional market e-Commerce in the world. This, above all, is due to the presence in the given region, a country like China, which was among the top 10 e-commerce markets in 2015. Huge online profits in China, as well as India and Indonesia, will boost e-commerce in the Asia-Pacific region as a whole, reaching $ 1052.9 billion in 2017, according to e-Marketer analysts. USA. The above trend is confirmed by statistical data for the last year of 2015, where the online mode is considered in the country

section. So, the largest online market, as already mentioned, has been formed in China with a volume of world sales of 562.66 billion dollars. The United States is 62% more than e-commerce in the United States.

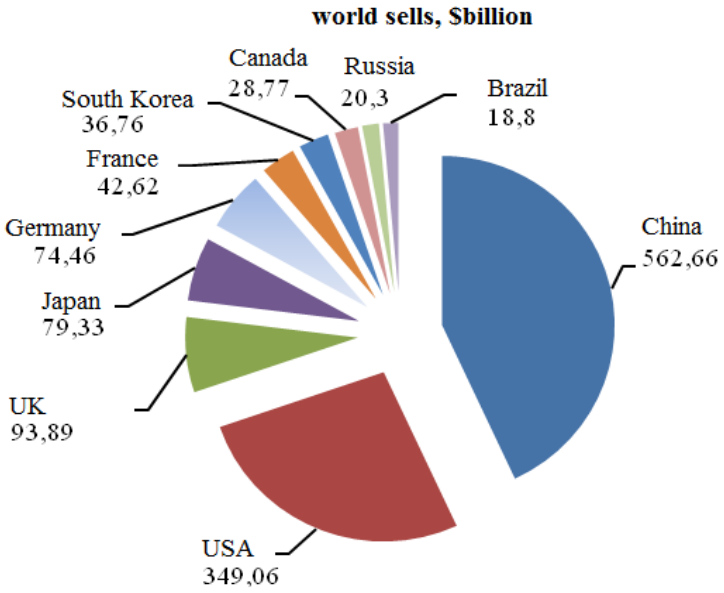

Fig. 8.3. Top-10 of world e-commerce markets
Source: [9, p. 34].

Accelerated economic development happens due to the reduction of the flow of goods and the attraction of external resources and the functioning of the infrastructure of global markets. At the same time, the growth of e-commerce is largely due to the decline in traditional trade. In the world economy, what S. Bowles called "institutional displacement" is observed, which "occurs when the presence of one institution violates the functioning of another. In particular, e-commerce in Japan left over a million intermediaries of various levels without work in 2007 alone" [1, p. 223]

In the context of virtual globalization, the question is only in which countries are accumulating the dividends from the development of e-commerce, and in which the losses from the accompanying

degradation of traditional trade. It is no accident that many Western economists directly point out that e-commerce is today one of the last areas where business can benefit, and a place for future global competition. Among the priorities of institutional development of retail trade, it is necessary to develop information management systems in order to provide global deliveries, make payments and comply with all banking requirements. It is here that global competition unfolds, which is not directly related to production technologies, nor with financial potential but with the level of maturity of the innovation, information and communication infrastructure network.

China is today the undisputed global leader in the pace of e-commerce development. Initially, one of the factors of the phenomenal growth of the Chinese economy was the "openness of the economy (kajfan tsget), based on an export-oriented model of development, which involves increasing the foreign exchange earnings of the development of the latest information and communication technologies, the introduction of modern schemes of industrial logistics" [3, p. 11-12]. However, if you have only one production potential, it is clearly not enough if there is no distribution infrastructure. Therefore, today, China's strategy is not only the use of passive defense tactics of trade defense, but also the active tactic of gaining benefits through integration unions. China is using e-commerce opportunities for cross-border product sales to overseas markets, both through direct sales and through the development of other forms of economic co-operation.

The peculiarity of the Chinese approach to the organization of e-commerce is the active regulatory intervention of the state, when it sets the task for business and develops with it the priority directions of the economy. The policy of the Chinese government in the field of e-commerce can be characterized by three words: direction, stimulation and promotion. The state in China determines the direction of economic development, stimulates economic activity and promotes economic actors in achieving their goals.

According to a study conducted by the Pay Online press center, it also became clear which technical devices are most often preferred, which of them are most convenient when making online purchases [paypall]. So, in the vast majority of cases, residents of the globe, regardless of their country of residence, prefer to use computers and laptops, about 70% of cases; the advantage of tablets and smartphones

for online purchases was divided approximately equal to 15%. It is also noteworthy that, for example, in the UK, online commerce is about 30% of the country's entire economy; In Japan, almost 97% of Internet users make purchases online.

Despite the rather powerful position of global e-commerce in online space, it is still difficult for them to compete with national players in local markets. Receiving recognition by foreign virtual consumers is no different from the recognition of ordinary foreign retailers in the local market by off-line consumers; they also need to adapt their offers to the specifics of a particular country. Considerable attention should be paid to the experience of China in the construction of the production and sales, innovation infrastructure of the network economy, which is not only one of the leading in the world, but much more important is that this infrastructure is global in nature and develops regardless of the promotion or counteraction of public administration.

World trade operations are realized thanks to the functioning of international and national transport systems, the effectiveness of which involves reducing transport costs, which in turn requires decisive action in the development and implementation of innovation projects, the corresponding innovation infrastructure. The latest trends in the global economy are driving the transport industry to increase the speed of traffic, and therefore, the modernized tracks should be high-speed to accelerate overcoming significant distances, which also increases the cost of construction and maintenance costs. The comparison of temporary and costly costs in aggregate confirms that older technologies are more irrelevant, and the solution of problems of the transport industry is possible only at the world level with the use of innovative, breakthrough transport technologies [4].

The result of the innovative development of the transport industry is the intelligent transport system (ITS), which is a single complex of automated systems designed to collect, process and transfer information about the state of the transport infrastructure, the exchange of information between its users and the relevant management structures in real-time mode [6]. Implementation of ITS improves the efficiency of the functioning of transport infrastructure, expansion of foreign economic activity entities. The application of innovative technologies in the world transport system should be based on the global information system of transport communications, which can be overground and

surface overhead roads using Stun Technologies Yunitsky (STY). The length of the existing world transport communications in general is 35 million kilometers, of which more than 32 million - highways, more than 1.2 million - railways, about 1 million kilometers - main pipelines; There are currently no transport systems based on string technologies. The energy efficiency of two-way STY is 1.5-2 times higher than the rail and 3-5 times the car, and monoSTY has no equal among well-known and promising transport systems. In particular, at a speed of 100 km / h in urban cycle, the specific energy consumption (fuel) will be: 0.6-0.8 kWh of electric energy per 100 passenger-kilometers, or 0.15-0.2 liters of fuel per 100 passenger-kilometers [11].

International trade flows are realized thanks to such an object of the transport system of the world as shipping, which requires adequate infrastructure. Innovative systems and new technologies radically change the requirements for the functioning of the port infrastructure. Changes in distribution patterns and in the structure of the geography of maritime traffic reformat the hierarchy of ports, and some historical ones, moved to the interior of countries. Environmental and security issues force ports to enforce rules and meet certain requirements by investing the necessary funds that may not have any commercial return on investment. At present, international trade has become a significant driver of economic growth in countries. It has united all national economies into the global economic system, a vital link in which carries out a network of world trade traffics. Trade needs are growing all the time, therefore there are changes in the volume and range of goods exchanged, requirements for the speed of their transportation, the delivery of goods in just in time (just in time) and other parameters of the quality of transport products are increasing. Hence the changes in the organization and methods of transportation, especially sea transport, which today accounts for 90% of the total volume of world trade. Marine fleet in the middle of the last century has ceased to cope with increasing cargo turnover, despite the fact that the cargo carrying capacity of cargo vessels was 10-15 thousand tons, with speeds up to 25-30 knots with load carrying capacity of cranes up to 80 tons. Then, the shipowner Malcolm McClain (USA) in conjunction with shipping companies, Sea Land and Grace-Line found a way out of the existing crisis by conducting experimental shipments of sea cargoes pre-packed in heavy containers. Soon the optimal were recognized steel or

aluminum boxes with dimensions equal to the width and length of commonly used (in Europe, Asia, USA) railroad platforms - 8x40 feet (2.4x12.19 m) [7]. The emergence of containers accelerated the loading and unloading of ships 3-4 times, which greatly increased the number of international trade operations. Container transportation has become the first achievement of scientific and technological progress, an innovative breakthrough in the transport sector, expanded the network of elements of innovation infrastructure, which greatly influenced the development of the world economic system, and in particular, international trade flows.

Thus, the innovative waves of the development of global industrial infrastructure contributed to the emergence of new forms of international trade. Among them - e-commerce, aimed at the sale of goods and services using electronic data processing devices (first-order computers) and data transmission through the communication channels between the buyer and seller. Networked electronic technologies have a global potential for impact on the world market. E-commerce tools allow you to organize trade in goods, services, securities, operate on electronic exchanges, sell orders and payment for consumer goods, travel and educational services, and pay utility bills. The e-commerce environment facilitates access to databases, makes the market more transparent, enables direct contact between the manufacturer and the buyer; reduces transaction costs in logistics chains minimizing the cost of entering the international commodity and financial markets. One of the main effects of the introduction and development of network electronic technologies in world trade is accelerated conclusion and execution of commercial transactions, which leads to an increase in the rate of turnover of capital and, accordingly, to increase the efficiency of production, the formation and functioning of the innovation, information and communication infrastructure of the global trading space.

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CHAPTER 9

IMPACT OF INNOVATIONS ON ECONOMIC GROWTH

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Scientists have been researching various drivers of economic development for years. They have found a strong positive impact of innovations for economic development. When studying the influence of innovations on economic growth first the term "innovation" should be defined.

The term innovation has always existed, however economists have paid little attention to the subject due to a common perception that it was impossible to specify, because of its multidimensional processes. Therefore, the next best alternative was to look at innovation as a random phenomenon and treat it as a black box. An exception of this is the work of Joseph Schumpeter who argued that innovation played a crucial role for economic and social changes and moreover, he was the only economist, at that time, who investigated the factors influencing innovation and its impact on growth [1]. Innovation is a process of transforming the new ideas, new knowledge into new products and services. Joseph Schumpeter defines innovation as an activity which leads to new producing function, new product. He divides this activity in several steps, as follows:

- Introducing a new product: the entrepreneur should produce, namely introduce a new product which can be easily sold and which is not offered in the market.
- Introducing a new method of production: innovation should offer a new scheme of production which through existing inputs can lead to an increased output, decrease of costs per unit product, introduction of new inputs and change of existing ones.
- Opening new markets: innovations can increase the sell in new regions, and also increase the number of customers.
- Finding of appropriate sources of raw materials: The raw material supplier can often lower raw materials‘ quality or increase their price and this directly influences over the quality and the selling price of the new product. Therefore, the entrepreneur should find an appropriate source of inputs, which are needed for production of new products.

- Establishing a new organization in the industry: Schumpeter describes this step as an entrance of the entrepreneur in the monopoly market, where there has been no competition previously; or creating conditions through which the entrepreneur would take the monopoly position in the market [2].

Shqipe Gerguri and Veland Ramadani [2] in their study use the term "Innovations" as a process, an activity of creating a new product or service, new technologic process, new organization, or enhancement of existing product or service, existing technologic process and existing organization. Innovation is increasingly recognised as a main driver of economic growth by a vast and diverse amount of literature, both theoretically and empirically. Consequently, innovation is of high priority by firms and governments, as firms consider innovation as the only strategy to react to increasing competitive pressures, while governments believe that innovation is the panacea to improve growth, welfare, employment, and the environment [1].

Studying an impact of innovations on economic growth, Dirk Czarnitzki and Otto Toivanen [3] have found a link between investments in economic growth and investments in R&D (research and development). They state that public R&D grants stimulate private investments in the countries studied. Dirk Czarnitzki and Otto Toivanen [3] have found that various implications of the Schumpeterian model had found empirical support. Such empirical findings have implications on the structure government support to private sector R&D. They [3] insist that most OECD countries and an increasing number of emerging economies such as India use R&D subsidies and R&D tax incentives.

Research paper of Birgitte Gregersen and Bj?rn Johnson [4], who are also concerned about the role of innovation in economic development, gives an overview of various approaches to how innovations affect economic growth: from standard macroeconomic equilibrium theory, growth accounting, new growth theories, catching-up theories, evolutionary theories based on theories of techno-economic paradigms and co-evolution to a systems of innovation approach. The researchers insist that for policy makers, who try to stimulate growth by supporting innovations, the focus should be on designing and implementing institutional changes that continuously supports technical and organizational learning and innovation [5].

Research paper of Nathan Rosenberg [6] illustrates why technological innovation is considered as a major force in economic growth and focuses on some of the most distinctive features of innovation in the highly industrialized economies of the OECD area. The research of Roman Gurbiel [7] was focused on the experiences of Central and Eastern European Countries (with special emphasis on Poland, the Czech Republic and Slovak Republic) in innovation and technology transfer policies during economic transition and the challenges faced during EU enlargement. He concludes that innovation and technology transfer are the key drivers of economic growth in today's world economy. He found that there is a high correlation between the intensity of technology transfer and a country's innovation capabilities. Roman Gurbiel [7] notes that the policy of economic development could be broadly characterized as moving from import substitution to export promotion. According to Roman Gurbiel state policy enabled to acquire basic technologies mainly through import. After that once acquired technologies were further developed using local R&D capabilities, based on broad linkages between state and private research institutes. Analyzing Central and Eastern European economies he observes that despite some progress made in recent years Central and Eastern European countries still lag behind many of their European Union neighbors. Roman Gurbiel [7] conclude that because of lacking of effective technology transfer from R&D sector to industry, import and foreign direct investments are the main channels of technology transfer in transition countries. It should be noted that the changes implemented in transition countries can not be truly considered as innovations, because these ideas and technologies derive from developed countries.

Shqipe Gerguri and Veland Ramadani [2] highlight several core conditions that enable innovation and encourage economic growth: strong standards and effective enforcement of intellectual property protection, vigorous competition and contestable markets, a strong and sustainable fundamental research and development infrastructure, encouraging information and technology communication developments, a strong emphasis on education at all levels, etc. The study performed by Changtao Wang [8] uses patent and trademark statistics as innovation proxies to examine the long-run relationship between innovation and output in countries with a long-established system of intellectual

property rights. The findings provide evidence that innovation may no longer be playing a positive role in driving economic growth. Post-World-War-II evidence for countries with extensive measured innovation (e.g. the US) shows that innovation had non-positive effects on economic growth in most countries studied [8].

The role of innovations in economic growth of the developed countries differs from one of the developing countries. In the study performed by Abby Joseph Cohen [9], which is focused on the US economy, the researches states that the long-term record of success of the US economy is inexorably linked to a growing and well-educated work force, ample research and development expenditures by both public and private sectors, the availability of capital to fund expansion, and access to markets. She observes that developmental economists often reduce this to the shorthand of "the capital/labor ratio" in which capital investments, in combination with a steadily improving workforce, contribute to sustainable growth and rising personal incomes. The scientist states that the role of innovation has been critical to economic development as the US nation has evolved over the decades. She insists that there is a clear statistical link between innovation and gains in the standard of living. Scientific and engineering advances have spurred new products and processes since the founding of our nation [9].

In general, literature review leads to the idea that innovation do has an impact on economic development but the magnitude of the relationship between innovations and economic growth of different counties vary across the world. The impact of innovation played a remarkable role in driving economic growth since the beginning of the industrial revolution in the 1870s, and further led to significant improvements in the standard of living in many countries [1]. However, strong economic growth stimulated by the innovation of this period is thought to be difficult to repeat in recent decades. The era of fundamental changes in the living standard might have gone, and the usefulness of inventions might have decreased compared with the great inventions in the past. For instance, despite large expenditures in medical and pharmaceutical research, the improvement rate of the US life expectancy in the second half of the 20th century was only a third of that in the first half. The concern that innovation might have stopped

driving growth is drawing more and more attention (particularly in the case of the US), but there is lack of empirical evidence [8].

To prove the relationship between economic growth and innovation factors Person's coefficient was calculated for each pair of variables (growth vs. innovation factor of growth) and pairwise correlations of the the variables were estimated. The calculations were performed using database from Knoema, World data atlas [10].GDP per capita growth (annual %) states for economic growth. The following innovation factors supposed to affect economic growth were selected:

- Communications, computer, etc. (% of service exports, BoP (Balance of payment), weighted average). Communications, computer, information, and other services cover international telecommunications; computer data; news-related service transactions between residents and nonresidents; construction services; royalties and license fees; miscellaneous business, professional, and technical services; personal, cultural, and recreational services; manufacturing services on physical inputs owned by others; and maintenance and repair services and government services not included elsewhere;
- Renewable energy consumption (% of total final energy consumption).
- Renewable electricity output (% of total electricity output). Renewable electricity is the share of electrity generated by renewable power plants in total electricity generated by all types of plants;
- Information and communication technology (ICT) goods exports (% of total goods exports). Information and communication technology goods exports include telecommunications, audio and video, computer and related equipment; electronic components; and other information and communication technology goods. Software is excluded.;
- ICT goods imports (% total goods imports);
- ICT service exports (% of service exports, BoP). Information and communication technology service exports include computer and communications services (telecommunications and postal and courier services) and information services (computer data and news-related service transactions).
- High-technology exports (% of manufactured exports). High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery;

- Patent applications, nonresidents. Patent applications are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention--a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.

- Patent applications, residents;

- Research and development expenditure (% of GDP). Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development;

- Trademark applications, direct nonresident. Trademark applications filed are applications to register a trademark with a national or regional Intellectual Property (IP) office. A trademark is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise. A trademark provides protection to the owner of the mark by ensuring the exclusive right to use it to identify goods or services, or to authorize another to use it in return for payment. The period of protection varies, but a trademark can be renewed indefinitely beyond the time limit on payment of additional fees. Direct nonresident trademark applications are those filed by applicants from abroad directly at a given national IP office;

- Trademark applications, direct resident;

- Trademark applications, total [5].

Data of the following countries was studied: Australia, Austria, Belgium, Canada, Czech Republic, China, Denmark, Estonia, Hungary, Germany, Finland, France, Iceland, Italy, Latvia, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Ukraine, United Kingdom, USA. Because of certain countries' data missing, the association between GDP growth and some factors was not studied. Data was analyzed for the following period: 2000-2014.

The findings provide evidence that the relationship between GDP dynamics and selected variables varies significantly across the countries. Table 9.1 presents estimation results of the correlation between GDP per

capita growth (annual %) and innovation variables. Because of the big amount of data studied and therefore big amount of the results the table 9.1 presents coefficients exceeding 0,6. Results that are lower 0.6 are not stated in the table. Thus, research of Germany, Australia, Austria, Finland, Netherlands, Sweden and South Africa showed rather low level of association between GDP dynamics and selected innovation variables. Therefore, results of these countries are not stated in the table.

The highest level of correlation have been indicated between the GDP dynamics and the following innovation variables: trademark applications, patent applications, high-technology exports, ICT goods imports and renewable energy consumption. The findings are consistent with the previous research. ICT goods imports states in this research for the transfer of technologies, also studied by Roman Gurbiel [7]. The findings provide evidence of positive relationship between GDP growth and ICT goods imports, that leads to the assumption that the implementation of innovation technologies contributes economic growth. However, the correlation could also mean that high GDP growth rate gives to the countries the financial possibility to increase expensive import. Causal relationship between these variables needs additional tests. Analyzing the association between GDP growth and ICT goods it could be observed, that this sector of export contribute to economic growth in China and Spain. In Hungary and Latvia the association is negative.

The findings confirmed the research results of Changtao Wang [8], who used patent and trademark statistics as innovation proxies to examine the influence of innovations on economic growth. The magnitude and sigh of correlation coefficient varies significantly across the countries.

While trademark applications correlate with GDP growth dynamics mostly positive (except Italy and Norway), correlation of patent applied by nonresidents and GDP is positive, but correlation of patent applied by residents and GDP is negative. Analysis of association between other innovation variables and GDP growth dynamics confirms the thesis, stated by Changtao Wang [8], that economic growth of developed countries is less associated with innovations than GDP dynamics comparing to other countries (in our research – post communist countries).

Table 9.1

Correlation coefficient of GDP per capita growth (annual %) and innovation variables

Innovation variable	Pearson's coefficient of GDP growth and innovation variable		Innovation variable	Pearson's coefficient of GDP growth and innovation variable	
	Country	Pearson's coefficient		Country	Pearson's coefficient
Communications, computer, etc. (% of service exports)	Ukraine	-0.80	Research and development expenditure (% of GDP)	Spain	-0.72
	Canada	-0.69		Norway	-0.69
	France	- 0.63		Italy	-0.66
	China	0.63		Hungary	-0.63
	Luxembourg	-0.6		USA	-0.63
Renewable energy consumption (% of total energy consumption)	Ukraine	-0.82		Denmark	-0.61
	Spain	-0.75	High-technology exports (% of manufactured exports)	Switzerland	-0.83
	Italy	-0.61		New Zealand	0.66
				Ukraine	-0.64
				South Korea	0.62
			Trademark applications, total	Spain	0.9
Renewable electricity output (% of total electricity output)	Ukraine	-0.79		Hungary	0.64
	Spain	-0.69		Czech Rep.	0.62
	Hungary	-0.67	Trademark applications, direct resident	Spain	0.91
	Norway	0.64		Czech Rep.	0.76
ICT goods exports (% of total goods exports)	Spain	0.76		Poland	0.73
	Hungary	-0.70		Slovakia	0.69
	Latvia	-0.65		Hungary	0.63
	China	0.64		Norway	- 0.62
ICT goods imports (% total goods imports)	Iceland	0.83	Trademark applications, direct nonresident	Spain	0.82
	UK	0.76		Hungary	0.63
	Estonia	0.70		UK	0.63
				Italy	-0.62
	China	0.67	Patent applications, residents	Latvia	-0.85
	Spain	0.62		Belgium	-0.68
				Portugal	-0.67
ICT service exports (% of service exports)	Luxembourg	-0.71		Spain	-0.66
				Estonia	-0.65
	Hungary	-0.64	Patent applicat., nonresidents	Spain	0.85
				UK	0.70

Source: developed by the author on the basis of [10].

Analyzing the association between GDP growth dynamics and export of communications, computer and other service it should be admitted that positive sign of correlation is observed only in Chinese economy. In other countries correlation is negative that means low (if any) role of communications, computer and other services in economic growth of these countries. Role of innovations in electricity production and energy consumption (presented in the research by renewable electricity output and renewable energy consumption) is limited. Only in Norway correlation between GDP growth and these variables is positive and equals to 0.64.

The results of the study show that there is the negative association between GDP growth and research and development expenditures of developed countries. The case of these five countries contradicts the thesis of Shqipe Gerguri and Veland Ramadani [2], who highlighted the role of strong and sustainable fundamental research and development infrastructure among the other factors enabling innovation and encourage economic growth. It also contradicts the idea, stated in the paper of Dirk Czarnitzki and Otto Toivanen [3], who established a link between investments in economic growth and investments in R&D.

Many studies on the impact of innovations on economic growth show that level of the relationship between innovations and economic development of different counties vary. The findings are consistent with the previous research. The study have showed that innovation factors do play an important role in promoting economic growth, but the strength and the sign of the association of these variables with GDP growth vary across the countries. The highest level of correlation have been indicated between the GDP dynamics and the following innovation variables: trademark applications, patent applications, high-technology exports, ICT goods imports and renewable energy consumption.

Among the variety of indices that could be used as proxies for innovations, the special place belongs to patents and trademark applications. While trademark applications correlate with GDP growth dynamics mostly positive (except Italy and Norway), correlation of patent applied by nonresidents and GDP is positive, but correlation of patent applied by residents and GDP is negative. Analysis of association between other innovation variables and GDP growth dynamics confirms the thesis that economic growth of developed countries is less associated

with innovations than GDP dynamics comparing to other countries. Analyzing the association between GDP growth dynamics and export of communications, computer and other service it should be admitted that positive sign of correlation is observed only in Chinese economy. The results of the study show that there is the negative association between GDP growth and research and development expenditures of developed countries.

Pearson correlation coefficient was also used to research the role of innovations in the development of nations by Romuald I. Zalewski and Eulalia Skawińska [11]. In their study economical growth on a macro scale was approximated by several indicators e.g. GDP, GDP per capita, productivity or labour productivity, export of products etc. for a given economy. Innovative activity of nations was exemplified by Summary Innovative Index (SII) for EU countries and Global Summary Innovative Index (GSII). As a result of their research the relation between GDP per capita and SII for European and selected other countries was found to be a curvelinear semi-logarithmic plot. The similar plot for GSII was linear with Pearson correlation coefficient $r = 0.786$ [11]. That proves the important role of innovations in economic development of different countries.

Analyzing the relationship between GDP growth dynamics and innovation variables in Ukraine rather weak association of innovation factors and economic development can be observed in most cases. The findings provide evidence that strong negative association takes place in case of relationship between GDP growth dynamics and communications, computer, etc. (% of service exports), renewable energy consumption (% of total energy consumption). Thus, in 2015 the fraction of communication, computer and information services in the total amount of services of Ukraine was 16.3%, while the majority of Ukrainian services was performed by its transport facilities (54% of the total amount of export services) [12].

Correlation coefficients that show the relationship between GDP and high-tech export is close to zero, that confirms raw orientation of Ukrainian export. The level of correlation between ICT goods import and GDP dynamics is positive but not high. Thus in 2015 the fraction of electrical equipment in the total amount of goods import of Ukraine was 16.7%, the fraction of means of transport – 4.6%. The fraction of electrical equipment in the total amount of goods export of was 10.3%,

and the fraction of means of transport – 1.8% [12]. Comparing to 2014 there is a decline in both export and import of these goods. Ferrous metallurgy crops remain the main parts of Ukrainian export and the main part of Ukrainian import are oil and oil products [12].

Patent and trademark applications data also show their weak impact on economic growth of Ukraine. Statistical data show that the number of patent applications has been declining over the past couple of years. Thus, 4497 applications was filed to the State intellectual property service of Ukraine in 2015, that was 6.6% less than in 2014 and 17% less than in 2013 [13]. Positive (but not high) correlation between R&D expenditures and GDP growth in Ukraine theoretically could mean impact of the expenditures on economic development, but also it could mean additional funds available in the period of economic growth [5].

That leads us to the conclusion concerning low impact of innovations on economic development of Ukraine that is consistent with the studies mentioned above. Analysis of the technologically advanced countries' experience lets us to suggest the following measures of innovation policy to be taken by Ukrainian authorities to drive economic growth :

- designing and implementing institutional changes to support technical learning and innovation;
- government support to private sector R&D including R&D subsidies and R&D tax incentives;
- encouraging information and technology communication;
- government support to the knowledge-based industries and services;
- state promotion of innovation and technology transfer from scientific to industrial sector of Ukrainian economy;
- import of modern technologies, foreign direct investment promotion;
- improvement of foreign technologies using national R&D capabilities;
- effective intellectual property protection [5].

The prospective ways to enhance positive impact of innovations on economic growth of the developed countries differ from those for the transition economies. They come from the problem of developed countries, that is one of the following kind: "The creative process is born in the US; development takes place in Korea; and volume

production occurs in China" [9]. Developed countries should encourage the so-called "translational innovation." It is this type of approach that will enhance returns to investment, boost economic growth and help create productive, well-paying jobs [9].

Many studies on the impact of innovations on GDP dynamics show that level of the relationship between innovations and economic development of different counties vary. In general, the findings of the study are consistent with the previous research. The study has showed that the strength and the sign of the association of innovation variables with GDP growth vary across the countries. The highest level of correlation has been indicated between the GDP dynamics and the following innovation variables: trademark applications, patent applications, high-technology exports and ICT goods imports. Among the variety of indices that can be used as proxies for innovations, the special place belongs to patents and trademark applications. While the association of these variables and GDP is rather strong in most cases, the sign of correlation varies [5]. The results of the study show that there is the negative association between GDP growth and R&D expenditures of developed countries. Analyzing the relationship between GDP growth dynamics and innovation variables in Ukraine rather weak association of innovations and economic development can be observed in most cases.

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CHAPTER 10

GLOBAL VALUE CHAINS AND TRADE IN VALUE ADDED

Iryna V. Kravtsova

Over the last few decades, the world economy has changed significantly, particularly in the areas of international trade and production. Acceleration of the pace of scientific and technical progress and technological changes, trade and investment liberalization, growing interconnection of economies made the emergence of global value chains (GVCs) possible, playing a leading role in the world economy. Nowadays the world trade, investment and production are closely interconnected with GVCs, linking buyers and suppliers from different countries and operating a fragmented production worldwide. Multinational corporations play a key role in the organization of production, placing certain stages of production process in different countries and benefiting from local differences in production costs, infrastructure, marketing, logistics, trade and investment regimes, etc., while small and medium enterprises increasingly participate in GVC activities, too.

The emergence of GVCs has changed the pattern of international trade in recent decades. Different stages of production now are often conducted by multiple producers located in several countries, with parts and components crossing national borders multiple times. The GVC framework allows one to understand how global industries are organized by examining the structure and dynamics of different actors involved in a given industry. In today's globalized economy with very complex interactions, this approach is a useful tool to trace the shifting patterns of global production and trade, linking geographically dispersed activities and actors, and determine the roles they play in developed and developing countries.

The evolution of GVCs has also significant implications in terms of how countries integrate into the global economy, linking firms, workers and consumers around the world. For many countries, especially developing and low-income ones, the ability to effectively participate in GVCs has become a vital condition for development. This supposes not only ability to access GVCs, but also to compete successfully and

“capture the gains” in terms of national economic development, capability building and generating more and better jobs to reduce unemployment and poverty [6, p. 6].

The comprehensive nature of the GVC framework allows researchers and policy makers to answer questions regarding development issues that have not been addressed by previous paradigms. Additionally, it provides a means to explain the changed global-local dynamics that have emerged within the past decades [9]. As the problem of consideration the pros and cons of the spread of globalization has arisen, the GVC framework has gained importance in tackling new industry realities such as the role of emerging economies as new drivers of international production and trade, the importance of international product and process certifications as preconditions of competitive success for export-oriented economies, while also proving useful in the examination of social and environmental development concerns. A range of institutions and governments have commissioned GVC studies to understand global industries and international trade, and guide the formulation of new programs and policies to promote economic development.

GVC analysis examines the actors and mechanisms that shape and transform global economic processes and various types of inter-firm relationships. It seeks to identify why and how an industry is globally organized, how local economic processes are conditioned by global arrangements, and where change is more likely to happen [10, p. 92].

The starting point of GVC framework in fact is a definition of the concept of value chain itself. The value chain describes the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use [21, p. 4]. Considered in its general form, its scheme is described in Fig. 10.1. As one can see, production per se is only one of a number of value added activities. Moreover, there are ranges of activities within each link of the chain.

Thus, a value chain refers to the full range of value added activities required to bring a product from its conception, through design, sourcing raw materials and intermediate inputs, production, marketing, distribution and support to final consumers, with its further disposal and

recycling. Value chains exist within a complex matrix of institutions and supporting industries. It should be pointed out that value chains, as well as its every stage and every location, are sustained by a variety of critical inputs, including human resources, infrastructure, capital equipment, and services.

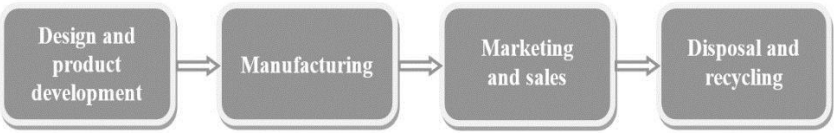

Fig. 10.1. A simplified scheme of value chain

Source: author's own elaboration.

The activities that comprise a value chain can be contained within a single firm or divided among different firms. A value chain can be [26, p.6]:

1) local – if different stages of production take place within a commute area or industrial cluster;
2) domestic – within a single country;
3) international – in more than one country;
4) regional – within a multi-country trade bloc;
5) global-scale – when actors coordinate activities across at least two continents or trade blocs.

In the context of globalization, the activities that constitute a value chain have generally been carried out in inter-firm networks on a global scale.

It is noteworthy that there is no unified definition of global value chain. Thus, the Global Value Chains Initiative official website notes that a global value chain is divided among multiple firms and geographic spaces [14]. G. Gereffi, J. Humphrey and T. Sturgeon refer to GVCs as the shifting governance structures in sectors producing for global markets [8, p. 79]. G. Gereffi, a founder of GVC framework, also provides no clear definition of the concept, just noting that GVC activities are spread far and wide across geographic space [10, p. 92] and generally carried out in inter-firm networks on a global scale [6, p. 7]. Moreover, G. Gereffi, J. Humphrey, R. Kaplinsky and T. Sturgeon in their joint research paper specify that GVCs operate in two or more regional blocs [19, p. 4].

According to G. Aboniy, value chains become "global" when their component activities are geographically dispersed across borders to multiple country locations [1, p. 5]. R. Banga considers GVCs as the sequence of all functional activities required in the process of value creation involving more than one country [3, p. 6]. In the view of A. Sydor, global value chain describes the full range of activities undertaken to bring a product or service from its conception to its end use and how these activities are distributed over geographic space and across international borders [27, p. 86]. P. Ramirez and H. Rainbird adopt the term "global value chains" to refer to the functional integration of internationally dispersed value-adding activities in a variety of complex inter-organizational network relationships [25, p. 700]. J. Ali-Yrkko even restricts the concept consideration to mentioning that GVCs span multiple countries [2, p. 72].

Therefore, we suggest our own definition of GVC: global value chain is a sequence of interconnected value added activities, located at least on two continents or within two trade blocs, required to produce a good or service, from its conception and design to delivery to final consumers, after-sales service and disposal. GVC for a particular product may therefore not only span over countries but also span across different industries including services.

A value chain approach systematically forges the division between the macro- (global/societal), meso- (inter-firm), and micro- (firm) units of analysis used to analyze the global economy and provides a way to see how each influences the others [5, p. 6]:

1) on the macro-level, it seeks to understand the roles and impacts of international institutions, organizations and standards on how and where new and existing products and technologies are developed and located;

2) on the meso-level, it seeks to understand the types and impacts of inter-firm relationships and national institutions (i.e. industrial policy) on economic development and a product's innovation to commercialization lifecycle.

3) on the micro-level, it seeks to understand how individual firms and/or the attributes of a particular product create opportunities or risks to the development of an industry or technology, or the development of such within a particular geographic location.

In scientific literature, two different "schools", or approaches within the broad GVC research work can be identified [22, p. 9]: the internationalist approach and the industrialist approach. These two labels – internationalist and industrialist – roughly identify the background and/or the methodology of research prevalent in each approach. Thus, internationalists privilege a macro perspective, both in terms of level of analysis and of policy focus; conversely, the industrialists adopt a micro founded framework of analysis with a policy focus oriented towards local and cluster development. Although it must be noted that differences can be found within each group and the two approaches often overlap, given that scholars of both schools substantially share similar thinking and frequently interact among each other, that results in some coauthored papers. Nevertheless, what clearly marks the difference between these approaches is the method of inquiry: the internationalists mostly concentrate on the industry as a whole, using industry level data/trade data, while the industrialists mainly investigate specific clusters, and adopt a case-study methodology, using qualitative data.

By focusing on the sequences of tangible and intangible value-adding activities, from conception and production to end use, GVC analysis provides a holistic view of global industries – both from the top-down (for example, examining how lead firms "govern" their global-scale affiliate and supplier networks) and from the bottom-up (for example, asking how these business decisions affect the trajectory of economic and social "upgrading" or "downgrading" in specific countries and regions).

There are six basic dimensions that GVC methodology explores, divided in global (top-down) and local elements (bottom-up) [6, p. 7]. The first set of dimensions refers to international elements, determined by the dynamics of the industry at a global level, including:

1) an input-output structure, describing the process of transforming raw materials into final products;

2) the geographic scope, explaining how the industry is globally dispersed and in what countries the different GVC activities are carried out;

3) a governance structure, explaining how the value chain is controlled by firms.

The second set of dimensions explain how individual countries participate in GVCs. The local dimensions are:

4) upgrading, describing the dynamic movement within the value chain by examining how producers shift between different stages of the chain;

5) an institutional context, in which the industry value chain is embedded in local economic and social elements;

6) industry stakeholders, describing how the different local actors of the value chain interact to achieve industry upgrading.

The GVC approach analyzes the global economy from these two contrasting vantage points: "top-down", or global, and "bottom-up", or local. Governance of GVCs, a key concept of the top-down view, focuses mainly on lead firms and the organization of international industries. Upgrading, the main concept for the bottom-up perspective, focuses on the strategies used by countries, regions, and other economic stakeholders to maintain or improve their positions in the global economy.

Governance analysis allows one to understand how a chain is controlled and coordinated when certain actors in the chain have more power than others. Governance is defined as authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain [9, p. 97]. In practice, governance analysis requires identification of the lead firms in the sector, their location, how they interact with their supply base and their source of influence and power over them. Understanding these patterns and how a value chain is controlled facilitates firm entry and development within GVCs.

The GVC governance structures are measured and determined by three variables: the complexity of the information shared between actors in the chain; how the information for production can be codified; and the level of supplier competence. According to different combinations of these variables, a typology of five governance structures has been developed in the GVC literature [8, p. 85-87]:

1. Market governance involves easily codified transactions, relatively simple product specifications, and suppliers having the capability to make the products in question with little input from buyers. These arms-length exchanges require little or no formal cooperation between actors and the cost of switching to new partners is

low for both producers and buyers. The central governance mechanism is price rather than a powerful lead firm. The export of many primary commodities is an example of this form of incorporation in global markets.

2. Modular governance occurs when complex transactions are relatively easy to codify, product architecture is modular and technical standards simplify interactions by reducing component variation and by unifying component, product, and process specifications. Typically, suppliers in modular chains make products to a customer's specifications and take full responsibility for process technology using generic machinery that spreads investments across a wide customer base. This keeps switching costs low and limits transaction-specific investments, even though buyer-supplier interactions can be very complex. Linkages are more substantial than in simple markets because of the high volume of information flowing across the inter-firm link. Information technology and standards are key concepts in modular governance.

3. Relational governance occurs when buyers and sellers rely on complex information that is not easily transmitted or learned, and supplier capabilities are high. This results in frequent interactions and knowledge sharing between parties. Such linkages require trust and generate mutual reliance, which are regulated through reputation, social and spatial proximity, family and ethnic ties, and the like. Despite mutual dependence, lead firms still specify what is needed, and thus have the ability to exert some level of control over suppliers. Producers in relational chains are more likely to supply differentiated products based on quality, geographic origin or other unique characteristics. Relational linkages take time to build, so the costs and difficulties required to switch to a new partner tend to be high.

4. Captive governance is typical for value chains where small suppliers are transactional-dependent on one or a few much larger buyers that often wield a great deal of power. The ability to codify – in the form of detailed instructions – and the complexity of product specifications are both high, but supplier capabilities are low. The power asymmetry in captive value chains forces suppliers to link to their buyer under conditions set by, and often specific to, that particular buyer, leading to thick ties and high switching costs for both parties. Since the core competence of the lead firms tends to be in areas outside of

production, helping their suppliers upgrade their production capabilities does not encroach on this core competency, but benefits the lead firm by increasing the efficiency of its supply chain.

5. Hierarchy governance describes chains characterized by vertical integration and managerial control within lead firms that develop and manufacture products in-house. This usually occurs when product specifications cannot be codified, products are complex, and highly competent suppliers cannot be found. While less common than in the past, this sort of vertical integration remains an important feature of the global economy.

The form of governance can change as an industry evolves, as well as governance patterns within an industry can vary from one stage or level of the chain to another. Moreover, some GVCs can be characterized by multiple and interacting governance structures, that affect opportunities and challenges for economic and social upgrading.

Economic upgrading – one of the key concepts within GVC framework – is defined as firms, countries or regions moving to higher value activities in GVCs in order to increase the benefits (e.g. security, profits, value-added, capabilities) from participating in global production [7, p. 171]. Diverse mixes of government policies, institutions, corporate strategies, technologies, and worker skills are associated with upgrading success. In GVC literature, four types of upgrading are identified [16, p. 1021]:

1) process upgrading – transforming inputs into outputs more efficiently by reorganizing the production system or introducing superior technology;

2) product upgrading – moving into more sophisticated product lines;

3) functional upgrading – acquiring new functions (or abandoning existing functions) to increase the overall skill content of the activities;

4) chain or inter-sectoral upgrading – moving into new but often related industries.

Two types of global value chains are distinguished in GVC framework: buyer-driven and producer-driven [18, p. 12]. The distinction is important because the dynamics of the relationships and inter-reactions they generate are different in each case. Moreover, the opportunities to leverage new knowledge and capabilities from these arrangements differ as well. Usually, “easy” technologies give rise to

buyer-driven chains, while "difficult" technologies with close coordination needs, proprietary technologies, etc. – to producer-driven chains.

In the buyer-driven value chains, large buyers with core competencies in branding and marketing are the driving actors. They increasingly organize, coordinate and control the production, designing and marketing activities to target consumer markets in developed and developing countries, and in the transition economies. These chains are typical for labour-intensive industries and are highly relevant to developing countries (for instance, agriculture, food, textiles, furniture industries, etc.). For the producers of branded products (for instance, "Nike" or "Nestle"), it is of the highest importance to capture much value added from the R&D on product development and from marketing. That's why they are keen to maintain the value of the brand and to avoid copying, through protecting intellectual property. Their strong market position is the result of the global brands and brands for a specific market or region.

In the producer-driven value chains, key producers (like "General Motors" or "Apple") in the chain control vital technologies, which are of crucial importance for positioning in the final product market. They coordinate these value chains and take responsibility for helping the efficiency efforts of their suppliers and their customers. These chains are typical for medium- and high-tech industries, like automobiles, electronics, telecommunications, etc.

Developing country producers tend to be part of labour-intensive, buyer-driven chains with the exceptions of the East Asian newly industrializing economies that have moved from buyer- to producer-driven chains (such as automobiles, electronics and telecommunications).

One of the most important questions that comes to mind when considering GVCs is to what extent countries are involved in a vertically fragmented production. One way to measure it – and historically the first indicator calculated in the literature – is to measure the vertical specialization share (VS share), which can be understood as the import content of exports. The indicator measures the value of imported inputs in the overall exports of a country (the remainder being the domestic content of exports). This indicator was first introduced by Hummels et al. [15, p. 80] and can be computed on the basis of national

input-output tables. More recent work has introduced a value-added approach in the VS share [11; 20]. The value of imports used to produce exports and the foreign value-added in exports are different because foreign imports can incorporate domestic value-added. An inter-country inter-industry input-output (ICIO) matrix allows for the calculation of value-added that returns to the domestic economy embodied in foreign inputs.

A limitation with the import content, or foreign value-added content of exports is that GVC participation is only measured upwards, through the incorporation of foreign inputs. Countries at the beginning of the value chain that export raw materials or inputs to countries that process them have, by definition, a low VS share. As opposed to the import/foreign value-added content of exports, the GVC participation index also takes into account what happens downstream and how goods and services produced domestically are further used in other countries.

Thus, Koopman et al. [11] add to the foreign value-added in exports the share of exports made of domestic value added used in third countries to produce other exports. The GVC participation index is then an index based on these two shares, hence giving a more complete picture of the involvement of countries in GVCs. The index is based on using an ICIO model to trace value-added in GVCs. The starting point is the decomposition of gross exports into value-added shares by source country. The authors define FV as the measure of value-added from foreign sources embodied in a particular country's gross exports. What remains once the foreign value-added is accounted for is the domestic value-added – DVA. The authors then further decompose this DVA into exported final goods, exported intermediates absorbed by direct importers, exported intermediates that return home and "indirect value-added exports" (IV). IV is the value-added embodied as intermediate inputs in third countries' gross exports.

Therefore, the GVC participation index of *i* country in *k* industry is calculated as follows:

$$GVC\_participation_{ik} = P_{ik} = \frac{IV_{ik}}{E_{ik}} + \frac{FV_{ik}}{E_{ik}}, \tag{10.1}$$

where IV_{ik} – indirect value-added exports, i. e. the domestic value-added embodied in third countries' gross exports; FV_{ik} – foreign value-added embodied in a country's exports; E_{ik} – a country's gross exports.

The higher the foreign value-added embodied in gross exports and the higher the value of inputs exported to third countries and used in their exports, the higher the participation of a given country in the value chain.

Global value chains framework challenge the way statistics on trade and output are collected. There is a growing awareness that current statistics can give the wrong picture [4; 17]. Trade statistics in particular are collected in gross terms and record several times the value of intermediate inputs traded along the value chain. As a consequence, the country of the final producer appears as capturing most of the value of goods and services traded, while the role of countries providing inputs upstream is overlooked. Bilateral trade statistics and output measures at the national level make it difficult to visualize the GVC processes.

Trade in value added describes a statistical approach used to estimate the sources of value that is added in producing goods and services. It recognizes that growing GVCs means that a country's exports increasingly rely on significant intermediate imports and, in turn, value added by industries in upstream countries. For example, a motor vehicle exported by country A may require significant parts, such as engines, seats, etc. produced in other countries. In turn, these countries will use intermediate inputs imported from other countries, such as steel, rubber, etc., to produce the parts exported to A. The trade in value added approach traces the value added by each industry and country in the production chain and allocates the value added to these source industries and countries. Therefore, this approach focuses on trade in intermediates – goods and services – in value added terms.

GVCs became the dominant element of world trade and investment, covering developed and developing countries. At present, about 60% of world trade consists of trade in intermediates – goods and services – used at different stages of products production for final consumption [28, p. 123]. According to traditional trade statistics, GVCs create a significant double counting in trade, since intermediates in world exports are counted several times, whereas they should be counted only once as value added. At the global level, the average foreign value

added in exports (intermediates that countries initially imported to produce their own exports of goods and services) is approximately 28%. Thus, almost 6 trillion dollars of the 21 trillion dollars of world gross exports in 2016 [29, p. 5], or one third of world trade has been double counted in global trade figures.

If one consider the evolution of world trade in goods and world trade in intermediate goods, their dynamics are similar and exhibit several phases from 1995 to 2016 (see Fig. 10.2). The Asian financial crisis severely damaged domestic demand in several Asian economies over 1995–2000, but total trade in goods, as well as in intermediate goods still grew slowly, and reached a low peak in 2000. Due to the dot-com bubble financial crisis in 2000–2001, trade in goods declined slightly. In 2001–2008, trade in goods increased substantially, not least due to China's accession to the World Trade Organization in 2001. As a result of 2008–2009 global financial crisis, trade in goods dropped sharply, but in 2010–2014 it showed a rapid V-shaped recovery, with still unclear trend started in 2015–2016.

Fig. 10.2. Volumes of world trade in goods, volumes and share (auxiliary axis) of world trade in intermediate goods, 1995-2016

Source: author's own calculations based on data from [23].

Notably, there is no clear indication of which product type contributes more to growth in total manufacturing trade, intermediate or final goods [12, p. 39]. Trade in intermediate goods contributed more than trade in final goods did to the growth of total manufacturing trade in 2001–2008 and 2009–2014 and to its decline in 2000–2001 and 2008–2009; trade in final goods contributed more to the growth of manufacturing trade during 1995–2000 and to its recent decline in 2015. Nevertheless, share of world trade in intermediate goods has steadily dominated and varied from 52% to 58% of total trade in goods during the period under consideration, though demonstrated a sharp decline since 2011. It is the decrease of intermediate goods share in world trade that could constrain a post-crisis recovery of the world trade in goods volumes due to protectionist trends in external economic policies.

Foreign value added in exports of developed countries accounts for 31%, it is higher than the world average (28%), therefore export dependence on imports in these countries is higher [28, p. 131]. However, this figure is somewhat distorted by EU indicator value (39%) due to the high weight of internal trade between highly integrated EU economies, which accounts for about 70% of total EU exports. In comparison, Japan and the United States have considerably lower shares of double counting (15%). In developing countries, foreign value added in exports is lower than the world average (25%), but much higher than in the United States and Japan, as well as the EU, if only external trade is taken into account.

To demonstrate the significant role of GVCs in the modern world trade in the best way, one should consider how the countries increasingly rely on foreign resources to export goods and services of their own companies with possible further processing in the partner countries. Quantitatively, those processes can be expressed in terms of GVC participation index. According to author's own calculations based on data from OECD-WTO Trade in Value Added (TiVA) Database [24] for 35 OECD and 28 non-OECD economies, intermediate goods traded within GVCs account for 31% to 71% of the world exports (see Fig. 10.3). Nearly all countries under consideration have increased their GVC participation over the period of 1995–2011 (the latest year covered by up-to-date version of TiVA database). The only exceptions are Malta and Croatia, but it should be noted that GVC participation indices of

these countries had also increased up to 2008, then dropped during the global financial crisis and have not recovered.

Among OECD countries, small open economies are more involved in GVCs, use more foreign intermediate resources in the production of export goods and services, and therefore have higher GVC participation indices; those countries are Luxembourg (71%), Slovak Republic (67%), Hungary (65%), Czech Republic (65%). Non-OECD countries show a similar trend: small economies, such as Taiwan (68%) and Singapore (62%), have the highest GVC participation indices, and the foreign value added in exports of these countries are the highest as well.

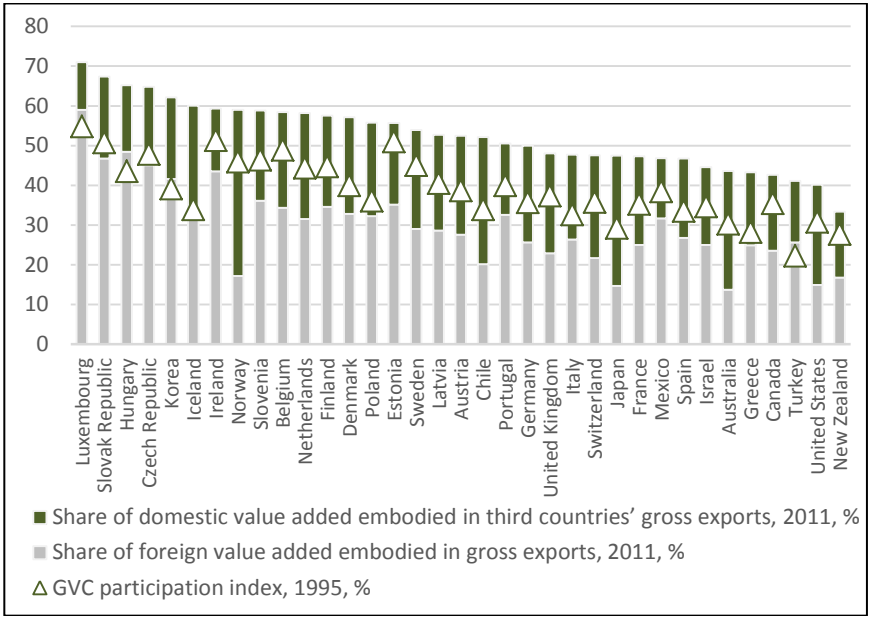

Fig. 10.3. GVC participation indices, OECD countries, 1995 and 2011
Source: author's own calculations based on data from [24].

Conversely, large economies, like the US, Canada, Australia and Japan, having most of the value chains focused in the country's territory due to the scale of economy, demonstrate relatively low GVC participation indices (40%, 43%, 44% and 48%, respectively). It should be noted that in the case of large economies it is more reasonable to

consider both components of the GVC participation index, since exports of these countries usually contain a low foreign value added, but their intermediate resources are widely used at the following stages of GVCs.

Particular attention should be given to the group of such countries as Brunei (GVC participation index is 47%), Saudi Arabia (46%), Russia (52%), Brazil (36%), Peru (49%), Colombia (39%) and Indonesia (44%). These countries have low rates of foreign value added in exports (3% to 14%), but their overall GVC participation indices are quite high. This is due to the export structure, dominated by raw materials – petroleum, gas, ores and metals, agricultural products – used as intermediates by third countries in their export production, increasing forward participation of these economies in GVCs.

At the industry level, the highest shares of foreign value added in world exports are observed in manufacture of electrical and optical equipment (41%), transport equipment (36%), as well as chemical (35%) and metal (34%) products (see Fig. 10.4). Typically, these sectors involve long and sophisticated value chains where the production of essential parts and components has been offshored. Companies take advantage of differences in costs, skills and technologies across countries, as well as economies of scale related to the specialization in specific stages of production. The lowest shares of foreign value added in world exports take place in agriculture (14%), services (14% on average) and mining (6%), but it's necessary to emphasize that the products of these industries are broadly used as intermediates in export production by other industries.

All the manufacturing industries and the service sector demonstrate an increase in foreign value added in world exports of goods and services – this indicator has increased in all industries over the period of 1995–2011. This clearly demonstrates the intensification of production fragmentation and increase in use of foreign resources to support enterprises efficiency and export competition. The only exception to the general trend is mining industry, where the rate of use of foreign resources in exports slightly decreased from 6,4% to 6,0%, probably due to specific character of the industry.

It should be noted that the world rates in some industries do not provide a complete picture of GVC participation by countries. For example, the foreign value added in exports in textile industry or electronics is much higher in developed countries than in developing

countries [24], confirming the fact that the latter provide intermediate components to the final goods exporters from developed countries. In other industries, such as machinery, automobile and chemical industries, developing countries typically use much more foreign components for its own export production than developed countries.

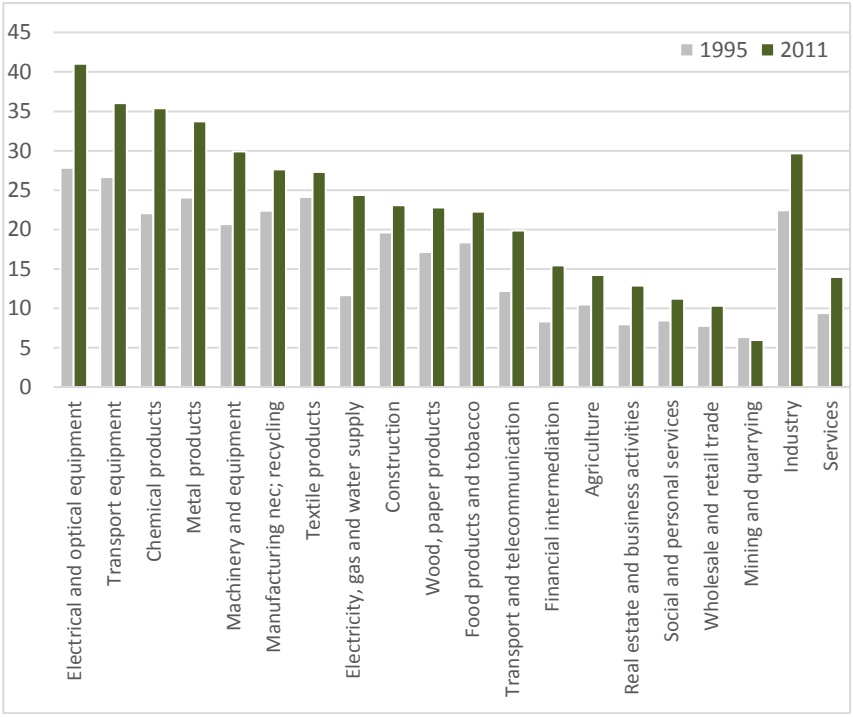

Fig. 10.4. Foreign value added share of world exports, by industries, 1995 and 2011, %

Source: author's own calculations based on data from [24].

Within the framework of GVCs and value added trade research, the service sector is an issue of particular interest. Services are often considered as the "glue" in GVCs (e.g. transport, telecoms, logistics, distribution, marketing, design, R&D, etc.). The increased use of services in manufacturing, both in terms of production processes and sales, has been described as the "servicification" of manufacturing, also termed "servicizing" or "manuservice" [13, p. 66]. Services are a critical

but often overlooked part of the GVC phenomenon. They play a key role in the ongoing transformation of international trade and investment patterns, both through enabling the development of value chains and through the creation of value chains in their own right. Share of services in global trade is rising rapidly and so is the role of services in GVCs. Improvements in technology, standardization, infrastructure growth, rapid advances in information and communication technologies and decreasing data transmission costs have all added to tradability of services.

Statistics on international transactions in trade in services are drawn from the balance of payments and reflect transactions between residents and non-residents. The share of services in world trade has been oscillating around 20% since the 1990s and up to 2016 [30]. However, in a national accounts context, the domestic services value added is taking a much higher importance worldwide, accounting for about 70% of world GDP [24]. Moreover, in contrast to services trade, the share of services value added in world GDP has increased by almost 10% since 1990 [24]. This discrepancy can be explained by the fact that many services are traded indirectly as being embodied in goods. Balance of payments statistics measure the gross value of direct cross-border services trade but not the services value added included in goods traded across borders. International input-output tables, like TiVA project, combine different national input-output tables to one consistent inter-country input-output table that allows measuring trade in value added terms. Value added exports of services consist therefore of the services content of direct services exports and of indirect services exports, i.e. the services content embodied in exported goods.

TiVA Database indicates that services, on average, account for 49% of world trade in value added terms [24]. The average services value added in gross exports of OECD countries is higher (54%) than in non-OECD countries (41%), while in developing countries this indicator accounts for only 33%. Therefore, almost half a value added in world exports is created in the service sector, since services are involved in production of the most of exported final goods.

The absolute leaders in the world in terms of services value added content of gross exports are Hong Kong (89%), Luxembourg (86%), Cyprus (85%) and Malta (78%) – see Fig. 10.5 for non-OECD countries calculations. However, while in Luxembourg foreign and domestic

contents of services value added in gross exports are 49% and 37% respectively, in other three countries mentioned the domestic share strongly predominate. This discrepancy can be explained by the fact that Luxembourg is a small open economy closely integrated with neighboring countries, while Hong Kong, Cyprus and Malta are the most service-oriented economies in the world, therefore their domestic services content of exports predominates.

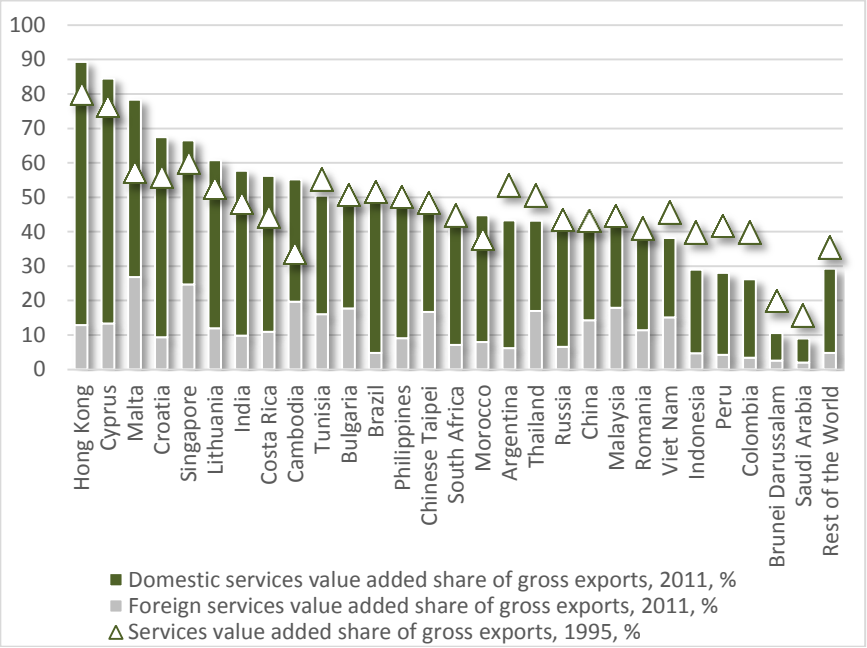

Fig. 10.5. Services value added share of gross exports, non-OECD countries, 1995 and 2011

Source: author's own calculations based on data from [24].

In contrast, services value added content of gross exports is the lowest in countries-exporters of primary commodities such as Saudi Arabia (9%) and Brunei Darussalam (11%), which export structure is focused on natural resources. It should also be noted that large economies such as the US, Japan, Australia, United Kingdom, Russia and Brazil have the lowest foreign contents of services value added in gross exports (about 90% of services in gross exports have domestic

origin). Most of countries have demonstrated increase in services value added in gross exports since 1995.

What is striking in the above analysis is the fact that services play a much more dominant role in value added contribution to exports of developed countries as compared to the manufactured products. Overall, in OECD countries, contribution of domestic value added to total exports from services is greater than contribution of domestic value added to exports by manufactured products. Domestic value added in exports by manufactured products play a dominant role in developing countries. The backward linkages in services also are not strong for developing countries. So, if most of the rents in GVCs come from shifting to services component of manufactured exports, developing countries may stand little chance in maximizing gains through functional upgrading in the value chains.

Therefore, GVCs have become one of the most important factors shaping international trade today. There is a clear trend to intensification of interconnection between national economies in the context of globalization, though all the countries participate in internationally fragmented production to different degrees and in different ways. An important achievement of the GVC framework is development of a new statistical approach based on trade in value added, counting the use of intermediate goods and services in international production, that enables to avoid double counting in world trade statistics. Despite the fact that for a long time trade in services has been considered as contributing a small share of world trade, the new data based on value added shows that many services are embodied in goods that are then exported, and hence the services content of trade is much higher when accounting for all the value added originating in the service sector.

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CHAPTER 11

ECOLOGIZATION OF THE INNOVATIVE SPHERE OF WORLD TRADE

Anastasiia G. Tsybuliak

For the current stage of development of the world economy, the legitimate and objective impact of globalization processes, covering all the components of its functioning. As a consequence of this, not only is the mutual interconnection of economic, political, cultural and other interests of its subjects, but also the identification of common problems for them that need to be combined at the international level. Among them, the ecological problems of expanding international economic interaction, which is the determining dominant of the sustainable development of the global economic system, are essential. Given the fact that one of the leading components of the world economy is international trade, it should be understood that these processes have a significant impact on it.

On the other hand, the development of trade relations between countries of the world is carried out in conditions of intensification of competition on the world market; therefore, it requires an application of innovative decisions in the organization of production, distribution and consumption processes. First of all, the fact that for the innovation sphere of world trade issues of ecologization appears even more acutely than for other components of its expansion. Competition and environmental friendliness of its manifestations should be considered in two directions. On the one hand, competition at the present stage of development of the global economic space should be regarded as a form of rivalry among actors in the world market that arises in the process of their interaction, is aimed at achieving the goals of international economic activity and is based, in particular, on the benefits of environmental trends. First of all, it is about such advantages as environmentally friendly production, ecological compatibility of raw materials, ecological characteristics of products, ecological compatibility, etc.

On the other hand, the term environmental competition should be used in the event of a competition between producers of products with

exceptional environmental characteristics. In this regard, the competitiveness of the world market actors, which is the basis of competition, should be understood as the ability of the subjects of the world economy to meet the economic needs of the market in products that have ecological characteristics, while ensuring a high level of compliance with the environmental requirements of management. In this case, the environmental competitiveness of the product will reflect its environmental impact. Among the environmental factors that determine the competitiveness should be the following: environmental conditions of the environment; the ratio of demand and supply to environmental goods and services; innovative-ecological parameters of economic activity; innovative attractiveness, based on environmental determinants; the degree of formation of innovative economic and ecological mechanisms, etc [3].

Determining the directions of ecologization of the innovation sphere of world trade involves, first of all, the definition of a set of factors that have a direct and indirect interconnected impact on the development of international trade relations. These factors should be a reflection of the main social, industrial, economic, innovative aspects of ensuring the development of environmentally oriented areas for the expansion of global trade cooperation. These include the following: the share of exports in GDP, the share of imports in GDP, the share of exports of high-tech goods in total exports, research and development costs, in particular in terms of their environmental focus, population, healthcare expenditure, exports environmental goods in total exports, emissions of carbon dioxide and methane emissions that are most harmful to the population, the level of consumption of renewable energy, which reflects the degree of involvement of alternative energy to ensure the environmentally friendly production principles, GDP. The proposed factors form a set of indicators that reflect the degree of environmentalization of the innovation sphere of world trade. Among them the priority value belongs to the factors shown in Fig. 11.1.

Analyzing the indicators of Fig. 11.1, it should be concluded that these indicators are interconnected and in general positive dynamics during 2006-2015. In particular, the growth is characterized by the share of exports of high-tech goods in the total volume of exports, which is a direct reflection of the degree of development of the innovative sphere of world trade [6]. Countries such as the US, Japan, China, Germany,

and the United Kingdom are of paramount importance for the development of this indicator. The reasons for this should be seen in the level of economic development of countries, the degree of development of production technology, the degree of application of innovations in the production and organization of business processes. The period of 2009-2016 is characterized by a generally positive dynamics of change in the indicated indicator (Fig. 11.2).

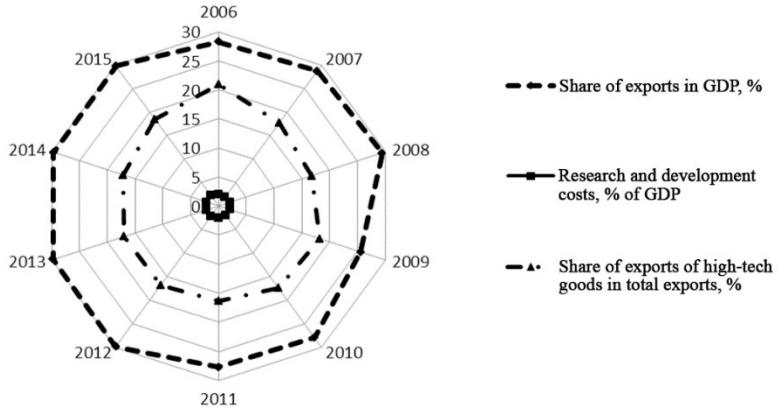

Fig. 11.1. The main indicators of the degree of environmentalization of the innovative world trade

Source: elaborated by the author based on [6].

The foregoing also requires an analysis of the general tendencies of world trade development and factors influencing the ecologization of its innovation sphere taking into account the conceptual foundations of sustainable development. Important in this connection are factors such as resource availability and other benefits of nature, the level of technological development, the level of development of innovation processes, the expansion of interstate trade interaction, etc. The factors influencing the ecologization of the innovation sphere of world trade should be divided into two groups, each of which will reflect a direct or indirect link with the direction of their operation (Fig. 11.3).

Thus, among the indicators of direct influence, it is advisable to dwell on those that are decisive for the t. interconnection and mutual influence of innovative processes of production and exchange. Among them, the following are defined. First, it is innovative changes in

the structure of trade relations. In this regard, note the following. The need to adhere to the environmental conditions of production, distribution, exchange, and consumption, linking these processes with the innovative component of the development of trade relations will modify the main trends and structure of international trade operations. The general tendencies of world trade development should include the slowdown in growth, caused by the effects of the global crisis.

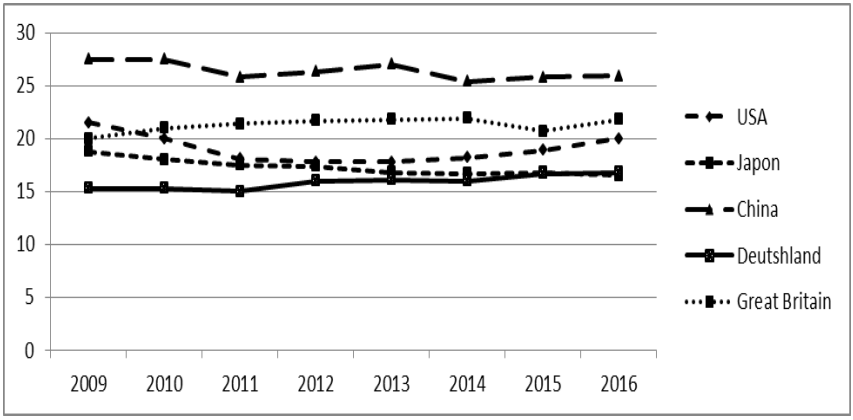

Fig. 11.2. Share of exports of high-tech goods in total exports
Source: elaborated by the author based on [6].

The global financial crisis has led to a sharp decline in business activity in all countries of the world, and, in the first place, the most developed, which led to a drop in demand for goods. At the same time, the growth of world prices for mineral raw materials, fuel and food contributed to an increase in the value terms of world exports and imports.

The reasons for the slowdown in foreign trade growth should be seen in the following factors: relatively low GDP growth in developing countries; unsustainable economic recovery in developed countries; growing geopolitical risks and threats (Middle East); a decline in world oil prices and a decrease in quotations on other commodities. At the same time, it should be noted that the geographical structure of world trade for the period 2010-2015 has not undergone significant changes. The main exporter and importer of goods remain Europe,

which accounts for about 36% of the total volume of foreign trade operations. The structure of world exports by groups of countries is presented in Figure 11.4.

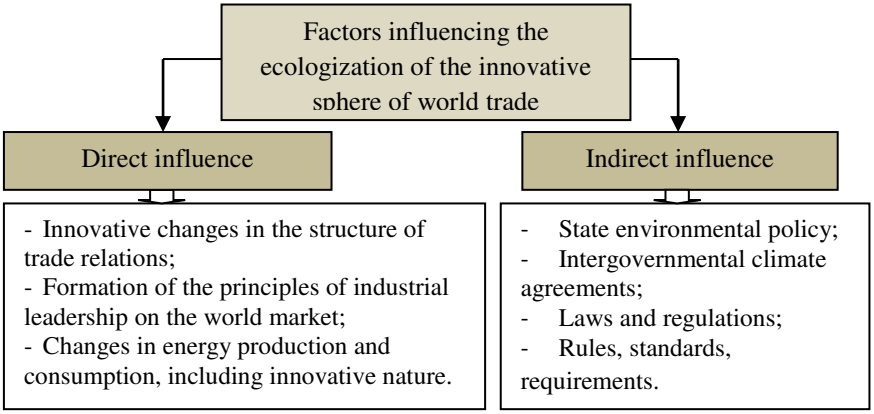

Fig. 11.3. Factors influencing the ecologization of the innovation sphere of world trade

Source: elaborated by the author.

So the modern structure of world trade is characterized by the predominance of share in the total exports of such regions as Europe, North America, and Asia [7]. This is due to their dependence on those factors, which we defined as a key to ensuring the effective implementation of civilizational consequences.

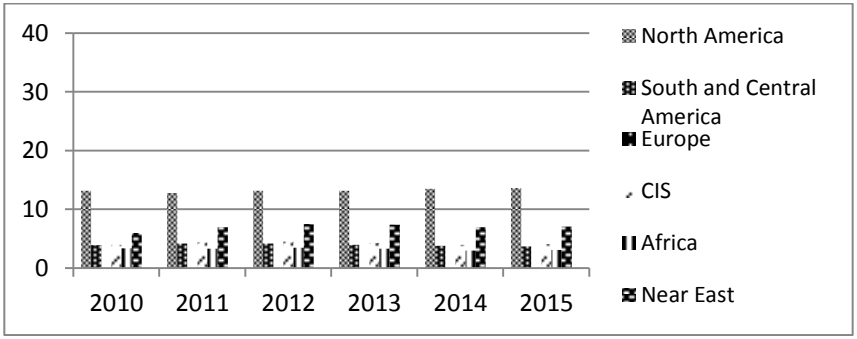

Fig. 11.4. Structure of world exports by group of countries in 2010-2015, %

Source: elaborated by the author based on [7].

The main preconditions that determine the regional aspects of the formation of environmental cooperation and have a significant impact on the degree of environmentalization of export production - is geographic, climatic, socio-demographic, economic, infrastructural, scientific and technical, political and legal. They shape the peculiarities of environmentalization the production and trading potential of the world. At the same time, the degree of sufficiency of these preconditions makes it possible to distinguish those regions that have a major influence on the development of international trade relations and their environmentalization. These include the European Union, the United States, Japan, and China [6]. It is the USA, China, Germany, Japan, France, Great Britain, Italy are the leading exporters and importers of environmental goods in the world market. Fig. 11.5 shows the import structure by a group of countries in 2010-2015.

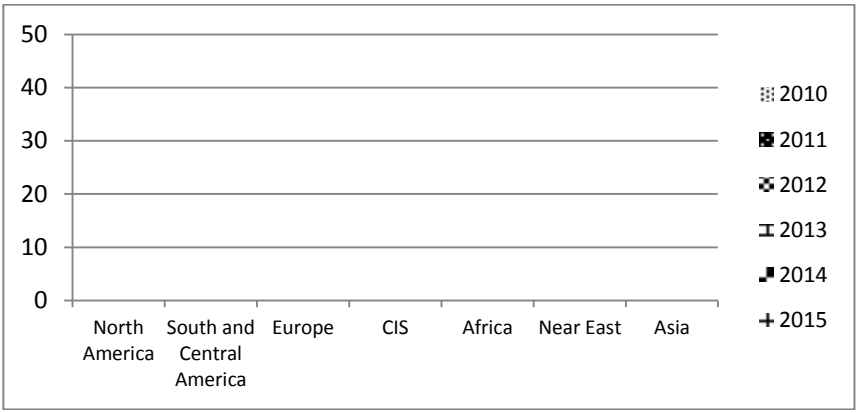

Fig. 11.5. Structure of world imports by a group of countries in 2010-2015, %

Source: elaborated by the author based on [7].

Key positions in imports are United States, China, and Germany. We also note that the role of Asian countries in the implementation of foreign trade priorities remains high, and their share is about 32%. The positions of the countries of South and Central America remain relatively stable. Significant importance for the development of international commodity exchange operations is to increase the level of concentration of interstate commodity exchange.

In the structure of world trade, the main article during the period of 2010-2015 is the production of the manufacturing industry, whose share in world exports is more than 68%. In addition, it should be noted roughly the same growth rate of commodity groups in the period under investigation, which indicates a lack of significant changes in the structure of trade with them (Fig. 11.6).

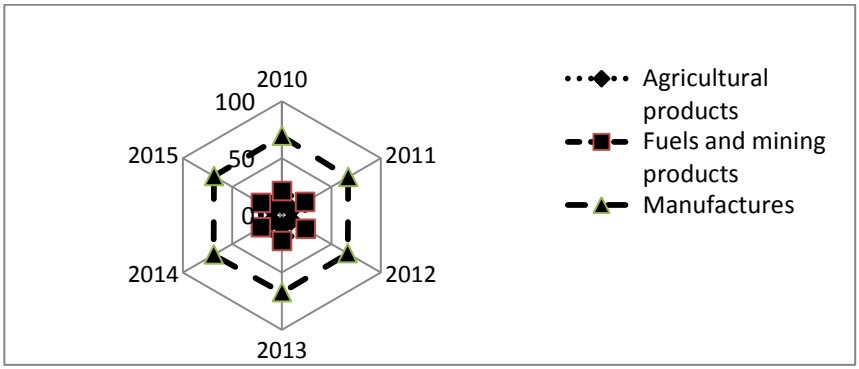

Fig. 11.6. Share of commodity groups in total world exports in 2010-2015

Source: elaborated by the author based on [7].

Ecology of world trade is closely linked with the need for the use of environmentally-directed innovative solutions and technologies in the production. It is therefore advisable to analyze the factors of trade eco-labeling in the industrial development of the countries of the world community [7]. The growth rate of world production in 2007-2015 is presented in Fig. 11.7.

In general, the growth rate of world production in the period under review shows growth. The use of innovative manufacturing technologies is the basis for increasing competitiveness in the future. Taking into account that the industrial production sector is increasingly using modern products, innovative technological processes, and technologies, materials, in 2016 the center of influence in the field of industrial production has shifted to dozens of the most competitive countries in the world.

Among the ten competitive countries in the industrial sector, North America and the Asia-Pacific region have taken a leading position.

Three North American countries ranked first in the top ten. According to the research by international organizations, by 2020, five countries in the Asia-Pacific region, including China, Japan, South Korea, Taiwan, and India, will be in the top ten ranking, leaving only two vacant seats for European countries to Germany and the UK. It is also expected that five Asian-Pacific countries - Malaysia, India, Thailand, Indonesia, and Vietnam will rank in the twenty competitive countries in the industrial sector over the next five years [6]. The World Industrial competitiveness index of the leading countries by 2016 results, as well as the forecast for 2020, is presented in Table 11.1.

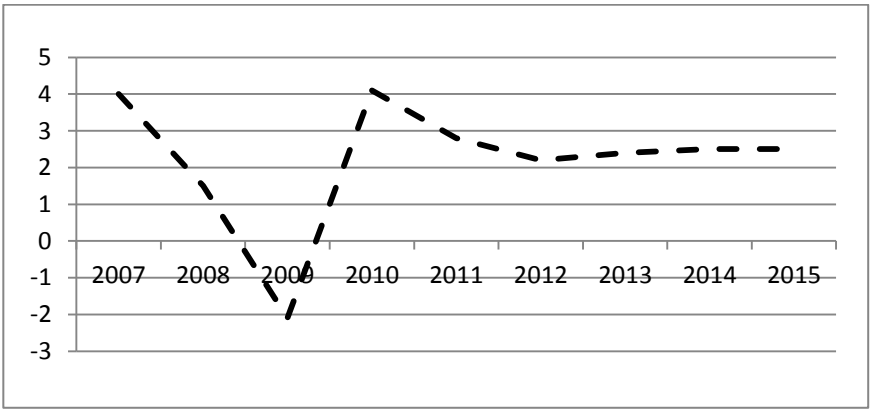

Fig. 11.7. The growth rate of world production in 2007-2015, %
Source: elaborated by the author based on [7].

The analysis of the world index of industrial competitiveness allows us to conclude that the world industrial production sector is showing rapid development. The volume of revenue from the sale and export of industrial and consumer goods stimulates economic prosperity, requiring more attention from the countries of the world to develop modern production capacities, investing in the development of high-tech infrastructure. In addition, the necessary condition for their effective development, response to civilization challenges should be the high degree of use in the industrial production of environmentally-oriented technologies, as well as raw materials for the production of products that has environmental characteristics.

Table 11.1

World index of industrial competitiveness of lead countries in 2016 and 2020 (forecast)

2016	2020 (forecast)
China	USA
USA	China
Germany	Germany
Japan	Japan
South Korea	India
Great Britain	South Korea
Taiwan	Mexico
Mexico	Great Britain
Canada	Taiwan
Singapore	Canada

Source: elaborated by the author based on [6].

The indicator of changes in the structure of production and consumption of energy is closely linked with the previous one, in particular, its innovative component - the development of alternative energy as a reaction to the globalization of the environment [1]. The alternative energy market in 2015 was evolving under the influence of the following factors: a sharp decline in world prices for fossil fuels; reduction of prices for renewable energy under long-term contracts; increasing attention to energy conservation among the countries of the world, as well as the adoption of the Paris climate agreement. It should be noted that most countries in the world are struggling to develop renewable energy and implement energy-efficient, environmentally-friendly measures through climate commitments. The global increase in renewable energy capacity in 2015 has grown by almost 9% compared to 2014 and has the structure shown in Fig. 11.8.

Thus, the development of renewable energy is also a factor in the manifestation of indirect influence, as it is linked to the implementation of the requirements of the intergovernmental climate agreement [1]. The Paris Climatic Agreement provides a common ground for global decarbonising the economy by the end of the century, namely: sets the long-term goal of achieving a balance between anthropogenic emissions and natural sinks of greenhouse gases; obliges countries to adopt national plans to reduce greenhouse gas emissions

into the atmosphere and revise them to reinforcement every 5 years; establishes a single and transparent system for monitoring, reporting and monitoring of climate change mitigation and adaptation measures for all countries; invites the governments of all countries to make maximum efforts to keep the global average temperature rising [4]. To this end, the parties to the Agreement have certain obligations.

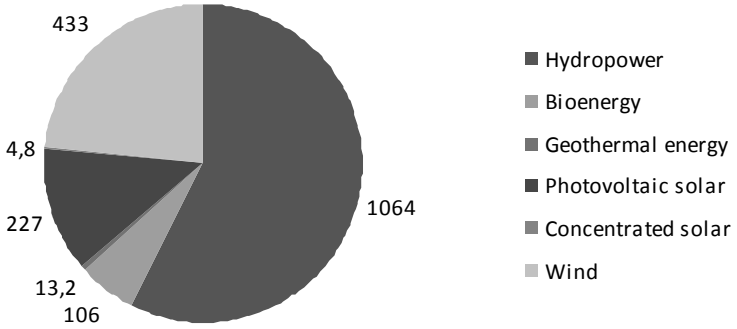

Fig. 11.8. Renewable energy in 2015, GW
Source: elaborated by the author based on [1].

According to an expert assessment, the strategy to combat the increase in the greenhouse effect should consist of a number of measures, namely: reduction of the use of fossil energy sources: coal, oil and gas; effective energy use; wide introduction of energy-saving technologies and development of alternative energy (use of renewable energy sources); introduction of new environmentally friendly and low carbon technologies; the fight against forest fires, the rehabilitation of forests - natural sources of carbon dioxide from the atmosphere [1].

The volume of harmful emissions in 2006-2015 indicate a lack of a stable tendency to reduce harmful emissions, however, taking into account that the process of reducing the negative impact of production on the environment is rather long; the absence of positive dynamics should be considered a good result. Note that even full-scale implementation of all these and other measures to prevent the increase of the greenhouse effect will not be able to fully compensate for the damage caused by nature as a result of an anthropogenic impact,

providing only a minimization of the consequences. At the same time, the main role in reducing the level of anthropogenic emissions of greenhouse gases in national plans and programs should be focused on energy, energy conservation and energy efficiency, and the development of renewable energy sources. At the same time, it should be emphasized that the carbon intensity of GDP tends to decrease (Fig. 11.9).

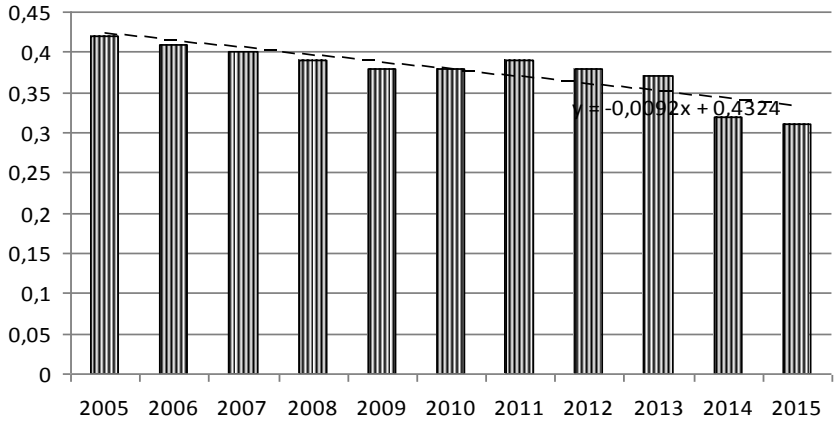

Fig. 11.9. Carbon intensity of GDP, kg of CO2 per dollar

Source: elaborated by the author based on [4].

This confirms the growth of the level of world-class production with environmentally-directed technologies and innovative potential. In order for the countries of the world to be able to implement environmental priorities in the innovative world trade, environmental policy tools are needed to apply the principles of innovation-ecological trade balance.

Implementation of environmental policy instruments should be considered as a response to the impact of civilization trends, and therefore the phase of development of these phenomena somewhat coincides, since its effective development, implementation of provisions and the use of instruments began in the second half of the XX century. The previous period was characterized, firstly, by the complication of environmental problems of the development of society, so the environmental policy was aimed at reducing the level of air pollution, especially sulfur dioxide and solids. Secondly, it is increasing the quality of world water resources, as evidenced by the decline in the biological need for oxygen in many reservoirs. Thirdly, it is by reducing

the emissions to the environment of many hazardous chemical products. Fourth, the expansion of the areas of reserves, parks, areas of wildlife, protected from anthropogenic impact, etc. The next stage of development of environmental policy is characterized, first of all, by the intensification of the use of economic methods and tools. First and foremost, it is about direct and indirect subsidies for the implementation of environmental projects; low-interest loans for enterprises that implement environmental programs; granting permission for accelerated depreciation of treatment equipment; privileged rates for indirect taxes on the sale of environmental technology or exemption from tax; tax benefits on income. Effective development and application of environmental support methods in each individual contribute to the achievement of the plan-wide goal of achieving ecological and economic balance. Consequently, we can conclude that the greening of the innovative sphere of trade relations is in close connection with a number of indices of industrial-technical, industrial and trade-oriented, which, in particular, affect the distribution of competitive potential in the world market.

Modern trade and economic space require companies-manufacturers to enter the external markets of environmentally friendly products in order to increase competitive advantages. On the one hand, the implementation of environmentally friendly and energy-efficient goods provides a high level of comparative advantage in relation to the companies represented on the market. In addition, the production of such goods is often associated with the need to implement innovative methods and approaches to production and sales. In view of this, the volume of global exports of environmental goods and their share in total world exports should be considered as an important part of the greening of the innovation sphere of world trade. It is worth noting the dynamic growth of export volumes of environmental goods during the period 2000-2015 [5]. At the same time, an increase in the share of environmental goods in world exports is noted, which increased by 1% over the period under study (Fig. 11.10).

It is advisable to include ecologically neutral and environmentally friendly goods in ecological terms. The production and consumption of environmentally neutral goods do not destroy the environment but ecologically aimed at making positive changes in it. In order to further expand the trade in environmental products, it is necessary to carry out

appropriate environmental and economic policies, which envisages, first of all, the certification of goods by place and method of production; creation of a market for environmentally safe goods; duty-free trade in nature-saving technologies; ensuring optimal distribution of global production; reducing the dependence in the underdeveloped countries on the exploitation of natural resources by providing them with access to the world market; trade liberalization, which, at the same time, should not undermine international and national efforts to protect the environment; directing profits from trade liberalization, including environmental protection, in particular compensation for damage from liberalization; taking into account the difference in the comparative value of environmental measures in developed and developing countries [2].

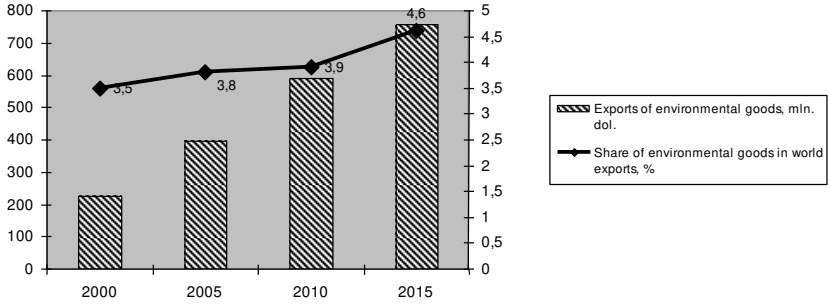

Fig. 11.10. Dynamics of world exports of environmental goods and their share in global exports

Source: elaborated by the author based on [5].

The process of the global economy environmentalization can lead to restrictions on trade through the unilateral establishment of norms or adjustments to international prices. The varying degree of development of trade and political conditions in the countries of the world necessitates the introduction of rigid tariffs for trade in environmental products. This can have a negative impact on developing countries due to their lack of capacity to meet stringent environmental standards and loss of sales markets. In turn, a decrease in national export potential can lead to a slowdown in economic growth, a decline in employment, and deterioration in the foreign trade balance.

Taking into account the above, the ecologization of the innovative sphere of world trade depends on a set of factors of socio-economic and production-technological orientation. In this regard, the following objectives should be considered as specific benchmarks for the greening of the innovation sphere of world trade: prevention of environmental pollution during the design and development of new products and services; development and introduction of modern high-performance innovative technologies with minimal impact on the environment; implementation of measures to reduce emissions, discharges and other harmful impacts on the environment at the international level; rational use of the natural resources of the planet while securing its own commercial interests; reduction of energy consumption, in particular due to the use of alternative energy; improvement of the waste recycling process; search and use of quality environmentally friendly raw materials for the production of goods and services; observance of legislative acts concerning all the certain aspects of international trade activity and its interrelation with ecological safety of humanity.

In general, ecologically-innovative priorities of development of foreign trade cooperation of the countries of the world community should be considered an increase in the use in the production of export products resource-saving technologies that reduce the harmful emissions to atmospheric air during the implementation of production activities; expansion of the use of renewable energy in export-oriented production on the basis of innovative technologies; increase financing for the development of the environmental sphere, in particular in the direction of financial support for producers of environmental goods; an increase in their share in total world exports, which is the basis for the transition of international trade cooperation to a new stage of environmentally-oriented development. In addition, it should be noted that, as a result of the objectively different provision of world regions, the prerequisites for taking into account the environmental and innovation component in the development of foreign trade relations, they are characterized by various peculiarities of the implementation of these priorities.

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CHAPTER 12

PRIORITIES FOR THE DEVELOPMENT OF LOGISTIC ACTIVITY OF THE NATIONAL ECONOMY IN THE MODERN BUSINESS ENVIRONMENT

Anna I. Zimina

Modern trends in the development of economic relations between participants in business processes are characterized by comprehensive implementation of system structural transformations and the search for new opportunities for the effective use of the potential of each country, based on the logistic approach to the supply chains management.

The attention to the definition of objective methods of reliable assessment of the state of logistic activity of the national economy in the conditions of high level of world competition is increasing, since this factor more fully reflects the level of economic development of the country as a whole.

A significant part of the total consumer value of any product is the logistic component, which includes the costs of transportation, forwarding, warehousing, storage, loading and unloading operations, customs formalities, as well as sorting, marking and assembly of consignments, that is, the entire set of elements of the logistic chain supply.

To date, there are several methods for determining the level of logistics efficiency of the country's economic system. The first approach is based on an assessment of the logistic component, that is, the fate of the final price of the product of the cost of logistics operations, which can reach up to 80% of consumer value. This value is directly proportional to the level of development of the country as a whole, in particular its economic, political and legal, social-cultural, technological environment. In this sense, industrialized countries have successfully achieved the optimal share of fluctuations in total costs of goods in logistics operations from 15% to 20% in the total value of goods that have already reached the final consumer, while developing countries have a share of 50- 80% [2]. Indeed, there is no doubt that there is a wide range of possibilities for reducing logistics costs due to the

formation of the logistic chain of supply of consumer value in the most effective way.

One of the directions of reforming the process of commodity movement in the logistics chain lies in the creation of a mechanism that will flexibly and effectively ensure the interaction of the main elements of the logistics system: supply - production - warehousing - storage - transportation - sales. Conditions of development of economic processes require the creation of organizational associations of industrial entities, warehouse enterprises, transport and trade infrastructure of the market in integrated logistics chains of supply of consumer value. It is they who have to reliably, in a timely manner and at a minimum cost, to deliver the products to the consumer.

Prerequisites for implementation of the integrated logistic approach to the process activation and reduction of commodity flow costs are:

- understanding of market mechanisms and logistic components in realization of competitive advantages of enterprises;
- real prospects and modern tendencies of integration of participants in economic relations and development of new organizational forms - logistic networks;
- technological opportunities in the field of the latest information technologies, which opens fundamentally new opportunities for interaction and cost reduction.

In the industrialized countries, a system of indicators for assessing the efficiency of logistics has been developed, which include: general logistics costs, logistics service quality, logistic cycles, productivity, return from investment to logistics infrastructure. These indicators are complex and form the basis of corporate reporting and plans at different levels. As part of the general logistics costs can be distinguished: costs for logistics operations, losses from logistics risks, costs for logistics administration.

The perspective direction of development is the logistic concept of managing the process of creating added value from the initial stages of extraction of raw materials and materials for production to the distribution, use, consumption and disposal of products. In practice, any enterprise has a number of business processes, the structure of which follows from the company's standards of rotation of materials, information, the order of making management decisions and organizing the movement of materials in technological processes.

Some costs of certain business processes may have a "hidden" character in other items of expenditure. Control over the costs that arise when moving materials in the period when consumer properties and unproductive material flow are not created allow us to evaluate the field of activity for streamlining logistics processes to reduce the cost of creating a product. Structuring and identifying costs allows you to connect with the causes of their occurrence.

In most enterprises with logistics services, special logistic performance reports are compiled by indicators: the number of processed orders per unit time, cargo shipments per unit of storage capacity and cargo capacity of vehicles, the norm of operational logistics costs per unit of invested capital, the logistics cost per unit of output , logistics costs in distribution per unit sales.

Another approach is formed by the ranking of the largest logistics providers in the national market and the dynamics of the development of their performance indicators in comparison with other countries of the world. A significant role is also played by the share of ownership of assets by these enterprises by residents (national ownership of capital) or by non-residents (the use of foreign investment).

This assessment determines the state of the market of logistics services as one of the main factors influencing the development of a favorable business environment of the country, including the potential of its international positioning in the ranking of the countries of the world economy.

The list of operations performed by logistics providers includes: transportation by own means of transport, storage and storage (long-term), intermediate storage (cross-docking), customs clearance, outsourcing services, overload, consolidation of shipments, financial support (organization of payment for services), tracking of cargo placement and other types of information support (telematics, tracking), consulting services, preparation of export, import and freight documentation, accounting and management balance of goods in stock, additional services with added value (packaging, distribution, return of containers), pre-sale and after-sales training, coordination and optimization of cargo movement, preparation of decisions related to logistics chain management, strategic planning of supply chain, aimed at increasing the customer's competitiveness.

The third approach to assessing the logistics of the country is the Logistics Performance Index (LPI), which is based on a survey of specialists from international, national and regional logistics companies. The essence of this method, which is developed by the World Bank, is the study of 160 countries every two years by a number of indicators with a ball system (from 1 to 5) through interviewing experts, experts with experience in the field of logistics.

For a single format, a database is created for each country with a certain level of efficiency of the work of the customs authorities, the quality of the infrastructure, the ease of organization of international supplies of goods, competence and quality of logistics services, the ability to track cargo, adherence to delivery terms (interval).

Ten of the world's countries with the highest indicators of logistics efficiency have not changed over the past six years - it includes leading players in the logistics industry. Low-income countries and the least efficient logistics are often land-locked, small island states or states that have experienced armed conflicts.

According to the experts of the World Bank over the past 10 years, the priorities for the development of logistics have changed significantly, especially as the slowdown in trade growth pushes the logistics industry to reorganize its networks and introduce innovations. The scope of policy measures aimed at increasing the efficiency of logistics is shifting from solving border problems in order to simplify trade and transport procedures to solve the problems of the efficiency of the functioning of domestic systems.

The first places of 2016 logistics rating were Germany, Luxembourg, Sweden and the Netherlands. In addition, the top ten leaders in terms of LPI complete Singapore, Belgium, Austria, United Kingdom, Hong Kong and the United States. China was on the 27th place (one step above the 2014 ranking). India (the fastest-growing economy) did not hit the first 30th, but was on the 35th place, which is 19 positions higher than its 2014 figure. Ukraine - on the 80th place (in 2014 - 61st place). Russia - at 99th (in 2014 - 90th place), Belarus - at 120th (in 2014 - 99th place). Completed list: Equatorial Guinea, Mauritania, Somalia, Haiti and Syria.

According to the main findings of the experts, the gap between the LPI of high-income countries and low-income countries is on average about 45%. Previously, experts have shown that the gap is

shrinking due to the growth of low-income countries, in 2016 this trend has changed, and the gap between countries with different income levels has become larger.

The fall in the performance of a number of countries in the ranking depends mainly on two reasons: transport infrastructure and the quality of logistics services (including transport operators and customs brokers). Countries with unfavorable geography (for example, without access to global waterways) have specific problems.

Attention to LPI by those who determine economic policy is increasing. In particular, this concerns the measurement of the impact on the development of interconnections in the supply chain. This index is used by the European Commission when formulating a system for assessing the efficiency of transport and customs union of the EU. Although the LPI index is a certain tool designed to raise awareness and stimulate innovation, it allows you to learn about the constraining factors of country development, to monitor the trends and extent of logistics development in countries around the world.

Providing gradual, proportional development of logistic activity as an instrument of influence on the country's economic growth requires some changes in the functioning of the customs sphere, primarily on the basis of increased volumes of goods transported across the border as a result of the growth of foreign trade turnover in the conditions of globalization of the world economy.

World experience proves the need to establish the main criteria for the implementation of customs formalities by countries that seek to become equal participants in economic relations. They include:

- simplification of customs procedures;
- acceleration of customs clearance;
- transparency and predictability of actions of customs authorities for participants of foreign economic activity;
- a partnership approach in relations between customs authorities and participants in foreign economic activity, including the establishment of effective procedures for resolving disputes.

Since customs control procedures are determined by the sequence and variety of forms of manifestation, the indicators characterizing their effectiveness are divided by certain features (Table 12.1).

Table 12.1

System of indicators for assessing the functionality of customs authorities

Fiscal function of customs payments at the macro level	Function of customs control procedures at the macro level	The function of the professionalism of customs officials
- share of customs revenues in the structure of revenue articles of the state budget; - nominal level of customs duty on the economy; - execution of the plan of receipts of customs payments to the budget; - level of use of electronic systems and technologies; - level of corruption ("shadowing"); - number of recorded cases of smuggling and violations of customs rules.	- time of transit of customs formalities, - percentage of goods selected for physical examination; - percentage of goods whose qualification code has been changed; - number of documents for customs clearance of one consignment; - number and duration of scheduled, unscheduled inspections and counter-inspections; - average number of days of the complex of customs procedures for one delivery; - number of shipments in terms of types of transport and directions of movement; - number of subjects of foreign economic activity, which were tested.	- volume of imported goods per one official; - volume of imported goods in quantitative terms per one official; - the average number of declarations made by one official; - volume of goods per shift (month, year); - average daily transfer of customs payments.

Source: compiled by the author.

First, these are the indicators that shape the fiscal function of customs payments at macro-level regulation of the economy: the share of customs payments in the structure of revenue items of the state budget, the nominal level of customs the burden on the economy, the implementation of the plan for the receipt of customs payments to

the budget, the level of use of electronic systems and technologies that reduce the time of customs formalities, the level of corruption, the number of recorded cases of smuggling and violations of customs rules.

Secondly, these are the indicators of customs control procedures at the micro level: the time of transit of customs formalities, the percentage of goods that are selected for physical examination, the percentage of goods, the qualification code of which was changed, the number of documents for customs clearance of one lot of cargo, unscheduled inspections and counter inspections, the average number of days of a complex of customs procedures for one delivery, the number of shipments by type of transport and directions of movement, as well as the number of subjectives ing companies that have undergone inspection.

Thirdly, these are indicators that assess the level of professionalism of officials of customs authorities: the volume of imported goods per one official, the volume of imported goods in quantitative terms per one official, the average number of declarations, executed by one official, the volume of goods per shift (month, year), the average daily transfer of customs payments.

An important direction in promoting the development of logistics in the country is to simplify the mechanism of organizing international supplies by creating the most optimal business environment through the use of world experience in the management of the logistics chain of commodity movement. First of all, this is due to the choice of attractive contractors, reduction of logistics costs, optimization of the process of delivery of raw materials, materials, components, semi-finished products, etc.

In addition, this relates to helping to overcome barriers in international supply and optimize the flow of financial and information flows that accompany the supply process. Choosing an access channel allows you to characterize the moment of transfer of property rights to the consignment that is the subject of sales contracts based on the use of the basic terms of delivery of Incoterms-2010, which are developed by the International Chamber of Commerce and have the status of an international standard. Due to the application of these rules, each party assumes the obligations of physical supply, payment of certain operations, as well as the risks of the process of commodity turnover.

This fact confirms the possibility of specifying the performance of duties by each party in resolving disputes in arbitration.

Importance should be given to the so-called negotiation channel, which is a combination or chain of working relationships between contractors in the conclusion of transactions. Funding channels are also formed as a set of financial transactions for the cost of batches of goods, channels of promotion, as a set of intermediaries in the chain of sales and channels of document circulation.

The role of logistics in the organization of international distribution channels is to regulate and simplify technological procedures at all stages of the commodity movement through the unification of standards, rules, tariffs, and technologies. Promoting the recognition by states of the priorities of international agreements through which the principles of logistics and development of transport and warehouse infrastructure are implemented, with the introduction of the provision of the required level of logistics services.

An essential component of the system of assessing the activity of logistics activities is the quality of trade and transport infrastructure. It should be noted that exactly the characteristics of the country's potential for the provision of transport freight services form the country's attractiveness for both foreign investors and for national business. Transport plays an important role in ensuring the sustainable development of economic relations, which are becoming increasingly complex in terms of the number of participants and the implementation mechanism.

Transport, unlike other sectors of the economy, has a linear-node character of the location, which confirms the specificity of its use and the set of operations in the service portfolio. The main elements of the territorial structure are transport routes - highways, transport points - railways and bus stations, river and sea ports, airports and nodes. Transportation corridors are important for external transport. These are multimodal routes (along with transport infrastructure located along them), which are transported outside the country. Ukraine borders with neighboring countries through several transport corridors.

The global market for logistics services today is characterized by the introduction of outsourcing - the purposeful separation and transfer of all or several functions of the business process to specialized organizations - logistics providers. The use of outsourcing in logistics

allows companies to focus on the main activity and reduce investment, and to obtain resources and technologies that are not available within the enterprise. In addition, to receive high-quality service, to respond flexibly to changes in the market situation and, as a result, to realize competitive advantages.

By degree of integration with the customer business, the number of proposed logistic functions, as well as access to international and regional sales markets, logistics service providers are divided into:

- 2PL-providers - highly specialized logistics intermediaries offering outsourcing of individual functions: transport companies, freight forwarders, warehouses for general use, cargo terminals, customs brokers, agents, insurance companies, consulting and logistics companies;
- 3PL-providers - provide integrated logistics services, take over several or all logistics functions. Such relationships are based on long-term arrangements;
- 4PL-providers are full-cycle logistic integrators that use the system approach to manage all logistics business processes of the customer and coordinate the interaction of the company with its key counterparts in the supply chain;
- 5PL-providers - entities providing logistics services by electronic means of information management in the management of all components of the supply chain in a global scale. E-Commerce logistics encompasses strategic planning and development of all necessary logistics systems and processes for electronic transactions, as well as administrative and operational support for their physical execution.

The current state of logistics activity of business processes is based on the introduction of methods of conducting transactions through the networks of electronic business interconnections: business resource planning, database development, order execution date and optimization of supply routes. E-business provides companies with the ability to respond in real time to changes in market demand, when trading transactions between business partners through the Internet is a prerequisite for reducing costs at all levels of the logistics chain.

Thus, the process of development of logistics activity of the country is accompanied by a number of factors of influence and needs to be solved with priority setting in the field of customs formalities, the formation of an efficient transport infrastructure, the promotion of

international operations, the ability to track the movement of goods, creating conditions for the development of a network of logistics providers, as well as proper the legal and regulatory framework for business process regulation.

The current stage of development of the world economy is characterized by a tendency to increase the enterprises providing logistic services, which offer complex functional solutions of the third, fourth and fifth levels of logistics outsourcing. The active development of the global logistics market extends to Ukraine, which is at the stage of formation and consolidation of the industry.

The main tendencies of the development of logistic activity of the economy are the growth: capacity of the market of logistic services, use of logistics outsourcing, processes of absorption and merger, as well as restructuring of companies that form integrated supply chains of consumer value.

CHAPTER 13

THE TRENDS OF ICT DEVELOPMENT IN THE GLOBALIZATION

Iryna S. Kalenyuk
Antonina Dyakon

An up-to-date trend in the world's development is the unprecedented dissemination of information and communication technologies (ICTs), which fundamentally changes the technological basis of society. Socio-economic development of countries under such conditions is provided mainly not by resource, but by technological, innovative factors. In view of this, for each country, a study of the processes of dissemination of ICT, the identification of the architecture of the modern world and its positions in it is a very important problem. The key goal should be to identify the main directions of activation of all factors and improve the country's position in the global economic environment. The rapid penetration of ICTs into all spheres of economic and personal life of the population does not leave an alternative and requires from every country persistent steps towards the information society.

In the scientific literature one of the most pressing problems is theoretical and methodological understanding of the essence of the transformational processes taking place in society. The theories of post-industrial society, technotronic society, information society and knowledge society emerged. In the writings of foreign and domestic scholars-economists, D. Bell, Z. Bzhezinsky, V. Inozemtsev, M. Kastesels, F. Makhlup, A. Chukhno and others. At the conceptual level, the issues of the formation of a new type of society are explored. Some issues of the growth of the role of education in the general context of the formation of a new type of society are investigated by F. Altbah, L. Antonyuk, A. Asaul, O. Grishnova, O. Kuklin, D. Salmi, B. Santo, L. Tsymbal, etc.

In the conditions of the emergence of post-industrial society, the strengthening of the trends of globalization, the actual problem of economic science and practice is the study of the processes of development of countries in the new social context. Axiom is the recognition that the breakthrough development of countries is provided

not only by the availability of resources, but also by the technologies of their use, including the production of qualitatively new products and services. To escape from the world leaders and to hold the leadership positions are those countries that make significant efforts to develop their intellectual potential and its implementation in the economy.

A knowledge-based society (society of knowledge) is a society oriented in its development to knowledge, in the economy of which the production and use of knowledge become independent areas of activity and play a decisive role in the process of wealth creation (value added or social product). The key indicators that characterize this new role of knowledge are indicators of distribution in the economy and among the population of information and communication technologies (ICTs), as well as indicators of the efficiency of the scientific and technical sphere: the quality of personnel, the number of patents and their share in the balance of payments, etc.

The analysis of the degree of dissemination of information and communication technologies in the economy is one of the most pressing problems of contemporary international economic research. Measuring the role of ICT in social development has been the subject of discussion at the World Summits on the Information Society, held in Geneva (WSIS 2003) and Tunis (WSIS 2005). The Geneva Action Plan was aimed at "an international assessment ... using comparable statistical indicators and research results".

As a result of the first World Summit, the Initiative of the Partnership for Measuring ICT for Development, aimed at improving the collection and quality of ICT data and indicators, especially in developing countries, has been initiated. The Members of the Partnership (International Telecommunication Union (ITU), OECD, UNCTAD, UNESCO, etc.) work together to develop a coherent set of statistical indicators ("core list"). The World Information Society Forum (WSIS 2010), which was held in May 2010, appointed a working group to improve the concept of monitoring the tasks of building an information society based on internationally defined indicators and standards.

MST Member States have signed up to a common vision of an information society in which telecommunications / ICTs will strengthen the interconnected world and boost social, economic and environmentally sustainable growth and development for all. "Thus,

the Connect 2020 goals were adopted in the context of broader socio-economic development goals, in particular, 8 poverty reduction targets and core needs agreed upon by the United Nations in 2000. As noted earlier, in September 2015, the United Nations has agreed to 17 SDGs (Sustainable Development Goals) that cover an even wider range of issues.

From that time on, for the international community, not only the measurement of the processes of dissemination of ICT is important, but also the social aspects - their impact on sustainable development, inclusion and innovation. Increasing access to ICTs will increase the use of ICTs, which in turn should have a positive impact on the short-term and long-term goals of socio-economic development. Increasing inclusiveness should increase the potential benefits of ICT for all, overcoming the digital divide between developed and developing countries and covering marginal and vulnerable populations. This should be accompanied by efforts to ensure accessibility, relevance to local content and to create opportunities for individuals and communities to take full advantage of potential benefits. It is also important to support the benefits of using ICTs for sustainable development, as growth also brings problems and risks that need to be managed. It is through the innovations and partnerships of the emerging ICT ecosystem that it can effectively adapt to the changing technological and social environment.

Since 2007, the publication “Measuring the information society”, which analyzes the state of the development of ICTs in most countries of the world, is being analyzed in detail and the index of ICT development (IRI) is calculated based on 11 indicators characterizing access, use and ICT skills. According to "Measuring the information society 2010", at the end of 2009, the world had 4.6 billion mobile users (or 67 per 100 inhabitants) [1], while in 2014 it was already 6.7 billion or 95% of the total population. In developed countries, mobile coverage is more than 100 per cent, in developing countries it is much less than 57 per 100 inhabitants but is growing at a very fast pace: in 2005, only 23 per cent of the population of this group of countries used mobile communications [2].

Internet access is spreading, albeit to a lesser extent. In 2009, 24 percent of the world's population used the Internet (1.7 billion people), including 64 percent in developed countries and 18 percent in

developing countries. By 2014, this number is growing rapidly, however, only 6.7 percent of households in the least developed countries have access to the Internet, compared with 46 percent of the world's households and more than 80 percent of households in developed countries.

Table 13.1 provides data on access to ICTs by countries that rank first in the ICT development index and some other countries. Characteristically, the availability of fixed telephone lines has a steady decline in all countries; in the leading countries it is from 20 to 58 per 100 population, whereas in Ukraine - 21.6, Russia - 25.7, China - 16.5. As for mobile users, Ukraine is at the level of advanced countries (144.0 persons per 100 people with mobile phones), in which from 114.0 (Iceland) to 148.5 (Luxembourg) persons use mobile communication. Ukraine lags behind households by computers (59.2 versus 77-98.5 in the lead countries) and Internet access (51.1 vs. 82.2- 98.8).

In the period from 2008 to 2015, Ukraine significantly improved its position on indicators of ICT use. Thus, the number of Internet users in Ukraine increased significantly from 10.6 to 49.4 per 100 population, but it is much less than advanced countries: in Japan, 93.3, Iceland - 98.2, Norway - 96.8, Finland - 92.7, Great Britain - 92.0 (see Table 13.2). Another big gap is the use of broadband and mobile Internet. In Ukraine, only 11.8 per 100 population use the large-scale Internet (compared to 31.5 - 44.8 in the lead countries) and 8.1 persons - mobile Internet (compared with 70.5 - 144.1 in developed countries). On the whole, we can conclude that, with regard to access and use of ICT, Ukraine is approaching the advanced countries of the world, but is significantly behind the indicators of higher-quality services provided by the possibilities of modern information and communication technologies.

Along with indicators of the use of ICTs in the economy, the characteristics of human resources that need to apply these modern technologies are important. In international comparative analysis, indicators that characterize the proportion of people with higher education, the increase of student contingents, and the share of graduates in the field of science and engineering specialties are widespread; scientific degrees in specialties in exact sciences and others.

Table 13.1

Indicators of access to ICT by country

Countries	Index development ICT (place)		Indicators of access to ICT									
			Fixed telephone lines per 100 inhabitants		Mobile users per 100 inhabitants		International Internet (bit per 1 user)		Share of households with computers		% households with Internet	
	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015
Sweden	7,85 (1)	8.47 (6)	57,8	36.7	118,3	130.4	109 928	421237	87,1	88.3	84,4	91.0
Luxem-burg	7,71 (2)	8.34 (10)	54,2	51.0	147,1	148.5	9 043 63	7186378	82,8	95.3	80,1	96.8
Korea	7,68 (3)	8.78 (1)	44,3	58.1	94,7	118.5	5975	46 764	80,9	77.1	94,3	98.8
Denmark	7,53 (4)	8.77 (2)	45,6	29.9	125,7	128.3	94 863	328018	85,5	92.3	81,9	91.7
Nederland	7,37 (5)	8.36 (8)	44,3	41.3	124,8	123.5	149 693	242 326	87,7	96.2	86,1	96.0
Iceland	7,23 (6)	8.83 (3)	61,6	49.9	108,6	114.0	12 752	725806	91,9	98.5	87,7	96.5
Switzer-land	7,19 (7)	8.50 (5)	64,1	50.3	118,0	142.0	65 290	275957	80,6	88.4	78,0	84.7
Japan	7,12 (8)	8.28 (11)	38,0	50.2	86,7	125.1	7 77	62618	85,9	80.0	79,8	96.5
Norway	7,11 (9)	8.35 (9)	39,8	20.0	110,2	113.6	52 722	220937	85,8	96.5	84,0	96.6
United Kingdom	7,07 (10)	8.54 (4)	54,2	52.6	126,3	125.8	77 179	374554	78,0	89.9	71,1	91.3
Finland	7,02 (12)	8.11 (14)	31,1	9.8	128,8	135.5	51 171	208526	75,8	89.3	72,4	89.9
USA	6,54 (19)	8.06 (15)	49,6	37.5	86,8	117.6	21 403	99017	72,5	87.3	62,5	82.2
Russia	4,54 (48)	6.79 (42)	31,8	25.7	141,1	160.0	4 12	26845	40,0	72.5	30,0	72.1
Ukraine	**3,87 (58)**	**5.21 (76)**	**28,7**	**21.6**	**121,1**	**144.0**	**5477**	**45743**	**21,2**	**59.2**	**10,3**	**51.1**
China	3,23 (79)	4.80 (84)	25,5	16.5	47,9	93.2	2 149	6530	31,8	49.6	18,3	54.2
Hong Kong	7.04 (11)	8.40 (7)	58.7	59.2	165,9	228.8	817848	4155651	74.6	80.4	70.9	79.0

Source: [2].

Over the 14 years from 2000 to 2014, the student contingent globally increased more than doubled - by 208.5% and reached almost 208 million (Table 13.3). The growth of the number of students is observed in all countries, but to a greater extent - in Asia (284%), South America (222.5%) and Africa (213.7%). The smallest dynamics is observed in developed countries in the educational industry - in Europe by 120.5% and in North America by 151.5%. Accordingly, the share of

different regions in the global market of educational services varies. If in 2000 European countries occupied more than a quarter of its (25.6%) and North American 17.7%, in 2014 these two regions together represent only 27.7% of the contingent of students in the world.

Table 13.2

Indicators of the use of ICT in the economy

Countries	Index development ICT (place)		Indicators of the use of ICT					
			Users Internet per 100 inhabitants		Broadband Internet users per 100 inhabitants		Mobile Internet users per 100 inhabitants	
	2008	2015	2008	2015	2008	2015	2008	2015
Sweden	7,85 (1)	8.47 (6)	87,8	90.6	41,2	36.1	35,5	122.1
Luxemburg	7,71 (2)	8.34 (10)	80,5	97.3	29,8	36.5	82,6	83.3
Korea	7,68 (3)	8.78 (1)	76,5	89.9	32,1	40.2	70,7	109.7
Denmark	7,53 (4)	8.77 (2)	83,9	96.3	37,1	42.5	27,3	116.8
Nederland	7,37 (5)	8.36 (8)	86,5	93.1	35,1	41.7	25,0	70.5
Iceland	7,23 (6)	8.83 (3)	90,6	98.2	32,9	37.0	0,0	93.4
Switzerland	7,19 (7)	8.50 (5)	77,0	88.0	34,2	44.8	28,3	97.6
Japan	7,12 (8)	8.28 (11)	75,4	93.3	23,7	30.5	75,5	126.4
Norway	7,11 (9)	8.35 (9)	82,6	96.8	33,3	38.9	20,9	92.8
United Kingdom	7,07 (10)	8.54 (4)	76,2	92.0	28,2	37.7	33,9	87.8
Finland	7,02 (12)	8.11 (14)	82,6	92.7	30,5	31.7	24,3	144.1
USA	6,54 (19)	8.06 (15)	74,0	74.6	23,5	31.5	26,3	109.2
Russia	4,54 (48)	6.79 (42)	32,0	73.4	6,6	18.8	0,6	71.3
Ukraine	**3,87 (58)**	**5.21 (76)**	**10,6**	**49.3**	**3,5**	**11.8**	**1,8**	**8.1**
China	3,23 (79)	4.80 (84)	22,3	50.3	6,2	18.6	0,0	56.0
Hong Kong	7.04 (11)	8.40 (7)	67.0	84.9	28.1	31.9	42.8	107.0

Source: [2].

The world leader in the growth rate of students is China, which has increased the number of its students by almost 7 times from 1999 to 2015 - by 681%, Brazil by 329%, Mexico by 186%, and India by 322%. The growth of the student contingent in Ukraine was at an average

world level, but since 2008, as in other post-socialist countries, the student contingent has started to decline. Developed countries generally show a slight growth rate of students, which is explained firstly by a steady socio-economic situation, and secondly, by a demographic factor, a reduction in the cohort of the young population. The increase in the number of students in these countries is provided mainly by increasing the inflow of foreign citizens.

Table 13.3

The number of students in the world and in the regions, 2000-2014

	2000		2005		2010		2014		2014/ 2000
	thou-sands	%	thou-sands	%	thou-sands	%	thou-sands	%	%
World	99 739.2	100	139 292.6	100	181 531.1	100	207 516.4	100	208.5
Africa	6 087.8	6.1	8 610.7	6.2	11 452.8	6.3	13 011.0	6.3	213.7
Asia	41 136.5	41.2	62 611.7	45.0	91 201.4	50.2	116 832.6	56.3	284.0
Europe	25 514.3	25.6	32 081.8	23.0	33 688.3	18.6	30 740.9	14.8	120.5
Northern America	17 700.8	17.7	22 881.1	16.4	27 278.9	15.0	26 811.9	12.9	151.5
Southern America	8 255.4	8.3	11 812.7	8.5	16 335.8	9.0	18 372.3	8.9	222.5
Oceania	1 044.3	1.0	1 294.6	0.9	1 574.0	0.9	1 747.8	0.8	167.4

Source: [3].

The general tendency of the development of many countries of the world is to increase the average level of education of the population. The age of students grows and the number of years of general secondary education required for entering to the labor market and effective employment. For this purpose, the presence of not only 8-9 years of general education, but also complete general secondary education and specialized vocational training, is an indispensable condition. It is assumed that more or less universal education in the near future will be 2 years of study in college.

Another interesting indicator is the rate of gross coverage of higher education, calculated as the share of the population aged 5 years after the completion of general secondary education, which studies in higher education institutions. According to UNESCO, Ukraine is in the first ten countries of the world for this indicator and in 2014 took the 7th place. Among the world leaders are – Spain, Belarus, Finland, USA and others (Table 13.4).

Table 13.4

Gross Higher Education Coverage

№	countries	2014	2010	2000	1990
1	Spain	89.1	78.7	57.8	35.6
2	Belarus	88.9	79.4	54.6	48.8
3	Finland	88.7	94.1	82.4	44.5
4	USA	86.7	94.2	68.1	70.8
5	Chili	86.6	69.7	37.1	-
6	Slovenia	82.9	88.3	55.2	22.8
7	Ukraine	82.3	81.9	48.7	48.7
8	Denmark	81.5	73.6	57.2	34.1
9	New Zealand	80.9	82.5	66.2	39.4
10	Austria	80.0	68.7	56.6	32.6
	Russia	78.7	76.5	55.8	55.0
12	Latvia	67.0	70.4	49.5	33.6
20	United Kingdom	56.5	59.1	58.5	26.5
33	Korea	95.3	99.7	78.4	36.9
	Creek	110.2	102.7	51.5	24.9
	Australia	86.6	80.9	67.0	35.1

Source: [4].

The growth in the need for higher education is manifested not only in the increase in student contingents, but also in the growth of the general educational level of the population. On average, in OECD countries, less than a third of the population (29%) has only elementary and part-time secondary education, and 35% have higher education. In the countries, the proportion of people with higher education has the following meanings: in Canada 51%, the United States 42%, Japan 45%, Korea 40%, United Kingdom 38%, New Zealand 41%, and Israel 46%. The proportion of people with higher education increases with age, so that 38% of young people aged 25-34 years old and 23% of the population aged 55-64 are in higher education, which can be observed according to Table 13.5.

In most countries, the proportion of people with higher education already exceeds the 50 per cent limit and is approaching its upper threshold. This means that in these countries (including Ukraine), higher education has already acquired not only a mass but also an almost universal character. Those countries in which the coverage of the population aged 18 to 25 years of higher education is low is

precisely the highest rates of student contingent growth (as a rule, these are many populated countries in Southeast Asia and Latin America).

Table 13.5

The share of the population with higher education, 2015

Countries	**Age groups**		
	25-64 years	**25-34 years**	**55-64 years**
Australia	43	48	34
Canada	55	59	46
Finland	43	41	36
Japan	50	60	38
Korea	45	69	18
Latvia	32	40	25
New Zealand	34	39	27
Norway	43	48	33
Poland	28	43	14
Portugal	23	33	13
Sweden	40	46	30
Turkey	18	28	10
United Kingdom	43	49	35
USA	45	47	41
OECD, average	**35**	**42**	**26**
EU – 22	**32**	**40**	**23**
Brazil	14	16	11
Russia	54	58	50

Source: [5].

In this context, the criterion proposed by M. Trou concerning masification of higher education is quite interesting. So, in his opinion, if higher education is received from 15 to 40% of a certain age group, then it can be considered mass [cited by: 6]. According to Table 13.4, we can observe that in the vast majority of countries this share is already much greater than the 50 per cent limit and approaches its upper threshold. This means that in these countries (including Ukraine), higher education has already acquired not only a mass but also an almost universal character. Those countries in which the coverage of the population aged 18 to 25 years of higher education is low is precisely the highest rates of student contingent growth (as a rule, these are many populated countries in Southeast Asia and Latin America).

The new stage in the expansion of information and communication technologies and new challenges for traditional forms of learning has

been the spread of MOOC (massive open on-line courses). The idea of MOOC began to be realized in the 90's of the last century, but a new impact was received in the fall of 2011, when leading American universities (Stanford and Massachusetts Institute of Technology) presented open-access curriculum that are taught by leading professors.

Technological peculiarities of the implementation of the MEP include the need to create special platforms that provide not only the possibility of open access to certain courses, but also the possibilities of interactive communication, discussion of all questions on the forum and crediting the knowledge. If at first these courses were of a cognitive nature, now they are discussing not only the technologies of free acquaintance with the content of the disciplines, but also the possibility of enrollment in their development.

The spread of new information and communication technologies change the social structure of society, creating a new system of communication technology that has found expression in the approval of the idea of developing a "network society". The network technology chain also arises in the education system. The so-called network universities created through scientific collaboration of the intellectual elite of various countries: scientists from different countries do not have well-defined spatial organization, they're going to thematic conferences, congresses, meetings are held in hotels are funded by grants or contracts.

The important characteristics of modern education is the process of internationalization which consists in the increasing the number of foreign students in the world in absolute and relative terms. The global education market is developing very dynamically, according to Table 13.6, it can be seen that for 10 years from 2000 to 2012 the number of foreign students has increased more than two times (217%). It shows an understanding of the world of the international prospects of this market niche of services and that they rush to occupy a main place.

Among the countries - the world's leading educational services are: United States, United Kingdom, Australia, Germany, etc. The change of forces on the world market is clearly traced. At first, it found expression in reducing the share of countries OECD. The main actor – USA – can still save their positions (near 19% world market), but only thanks to the active actions of attracting young people from another countries.

In general, part of the OECD countries relative to the total number of foreign students in the world is consistently high, up to 2007, it exceeded 84 per cent, but in 2014 we witnessing its decline to 72 percent (Table 13.6). The positions of many active actors (Australia, Austria, Germany, France, United Kingdom etc.) have decreased or remained at the same level, although in general the number of foreign students have increased.

Table 13.6

Number of foreign students in the world and regions

Regions	2000	2010	2012	%
Africa	100 031	178 716	196 568	197
Asia	334 562	726 054	806 281	241
Europe	935 879	1 984 442	2 160 874	231
Northern America	569 640	880 427	961 967	169
Latine America and Carribe	28 945	76 041	71 468	247
Oceania	118 646	350 165	330 886	279
World	**2 087 702**	**4 195 845**	**4 528 044**	**217**
OECD	**1 604 601**	**3 181 939**	**3 415 975**	**213**
EU	**822 025**	**1 686 734**	**1 822 330**	**222**
G20	**1 730 913**	**3 432 928**	**3 712 641**	**214**

Source: [7].

The distinctive feature of the world market development in 2007 – 2014 was the emergence of new active actors. This is, above all, China, which has increased its share from 1,4 to 2,5%, and overall number foreign students has increased by 2,5 times – from 42,1 to 108,2 thousands. The market share of Saudi Arabia has increased from 0,6% to 1,7% and the number of foreign students has increased more than 4 times – from 17,7 to 71,8 thousands; the market share of Russia has increased from 2% to 5%, number of foreign students – in 3,5 times from 60,3 to 213,4 thousands.

52147 foreign students were studying in Ukraine in the 2016-2017 school year. This made it possible to get 800 thousand hryvnas to the budgets of the higher educational institutions of Ukraine, as well as provide jobs for 4 million teachers. Also, foreign students spend about $ 500 million a year for his living. The foreign students came to study from 137 countries, including from Azerbaijan – 8833, Turkmenistan – 6291, India – 5885, Niger – 3035, Morocco – 2854, Georgia – 2605 etc. [9] Ukraine's share is about 1.5 percent of the global market, which is

higher than that of Sweden and Switzerland, is comparable with Belgium and Italy.

Table 13.7

Number of foreign students in some countries and the global market share (%), 2007 - 2014

Countries	2007		2010		2014	
	Number of foreign students	Global market share	Number of foreign students	Global market share	Number of foreign students	Global market share
World	**3 094 942**	100	**3 737 676**	100	**4 283 577**	100
OECD	**2 363 679**	76.4	**2 726 061**	72.9	**3 081 207**	71.9
Countries –nonOECD	**731 263**	23.6	**1011 619**	27.1	**1 202 370**	28.1
EU	**1 213 109**	39.2	**1 363 632**	36.5	**1 496 149**	34.9
Ausrtalia	211 526	6.8	271 231	7.3	266 048	6.2
Ausrtia	43 572	1.4	68 619	1.9	65 165	1.5
Belgium	25 202	0.8	36 126	1.0	55 516	1.3
Canada	92 881	3.0	106 284	2.8	151 244**	3.5
France	246 612	8.0	259 935	7.0	235 123	5.5
Germany	-	-	-	-	210 542	4.9
Italy	57 271	1.9	69 905	1.9	82 450**	1.9
Japan	125 877	4.1	141 599	3.9	135 803	3.2
Nederland	27 449	0.9	27 968	0.8	68 943**	1.6
New Zealand	33 047	1.1	37 878	1.0	48 892	1.14
Turkey	19 257	0.6	25 838	0.7	54 387**	1.3
Sweden	22 135	0.7	31 534	0.8	25 361	0.6
Switzerland	38 317	1.2	38 195	1.0	49 536	1.2
United Kingdom	351 470	11.4	389 958	10.4	428 724	10.0
USA	595 874	19.3	684 807	18.3	842 384	19.7
Ukraine	29 614	1.0	37 674	1.0	60 037	1.4
Southern Africa	59 237	1.9	66 119	1.8	42 351**	1.0
China	42 138	1.4	71 673	1.9	108 217	2.5
Russia	60 288	2.0	129 690*	3.5	213 347	5.0
Saudi Aravia	17 716	0.6	26 871	0.7	71 773	1.7
UAE	-	-	-	-	64 119	1.5

Source: [8].
Note: *-2009; **-2013

The lagging behind of the European countries from the USA by many economic and social parameters, including the number of students and scholars, is a subject of constant attention and concern of the European Union. The process of creating the European Research Area (ERA) was launched on the basis of the creation of network consortia of the Sixth European Union Research and Development Framework Program. In general, EU Framework Programs (all of them seven) were

identified as the main form of scientific and technical cooperation between European countries. This European Union's attention to the research sector affirms that the proper condition of research and the appropriate level of financing is the key factor in achieving successful socio-economic and innovation development. Depending on the proportion of GDP allocated to the financing of science, determine the role and function that performs science in society.

The global architecture of world leadership is characterized by constant and rapid changes in modern conditions, as world leaders are increasingly coming out of the country not only due to the availability of resource prerequisites. At the core of the high values of the indicators and dynamics of the development of countries such as Germany, Japan, South Korea, Singapore, Taiwan, Iceland, Finland, etc., there are significant investments in research and development, the implementation of their results in products and services produced, as well as in qualitative changes in the spheres of life.

In general, it is considered that the financing of scientific developments in the country should be at least 2% of GNP. On average, about 2% of world GDP is spent in the world, although these financial resources are expended extremely unevenly. The highest level of financing for research is observed in North America, which covers about 35% of global spending. The second place is located in the countries of Asia, which spend about 30% of the global level and in third place in the EU with a rate of 25%. Leading countries are countries that generally account for more than 3 percent of GNP for research funding: Israel (4.11%), Korea (4.11%), Japan (3.59%), Finland (3.17%), Sweden (3.16%), and Austria (3.07 %).

New and emerging outsiders are emerging as they grow their research potential. In particular, Slovenia and Estonia have rapidly increased funding for science. China is also showing a high dynamics, increasing by more than double this figure for 15 years. In general, the average R & D financing rate in the EU28 is 1.95% of GDP, in the OECD countries - 2.38% (Table 13.8).

According to Table 13.6, it can be noted that the difference in financing levels is significant: the highest level of financing in Israel (4.11% of GDP), the European countries in Finland (3.17%), the lowest - in Greece (0.84%) and Latvia (0, 68%). Regarding the general dynamics of changes in R & D financing in the EU, it should be noted

the tendency to increase funding in all countries, however - at different rates.

Table 13.8

Expenditure on R & D countries – leaders and countries-outsiders EU-27, % GNP

Countries	2000	2010	2012	2014
Israel	3,93	3.93	4.13	4.11
Finland	3.25	3.73	3.42	3.17
Germany	2.39	2.82	2.867	2.90
Sweden	-	3.41	3.28	3.16
Denmark	-	2.94	3.00	3.05
USA	2.62	2.74	2.70	-
Austria	1.89	2.74	2.93	3.07
Korea	2.18	3.47	4.03	4.11
Slovenia	1.36	2.06	2.38	2.39
Estonia	0.60	1.58	2.11	1.44
France	2.08	2.18	2.23	2.26
Japan	3.00	3.25	3.34	3.59
Poland	0.64	0.72	0.88	0.94
EU28	**1.68**	**1.91**	**1.92**	**1.95**
OECD	**2.14**	**2.30**	**2.34**	**2.38**
China	0.90	1.73	1.93	2.05
Russia	1.05	1.13	1.13	1.19

Source: compiled by the author based on [10].

In the strategy of development "Europe 2020" it is declared not only equalization of financing of research and development in the EU countries, but also achievement of the level of 3% of GDP. However, the presence of significant differences in the volumes and levels of funding by country still questions the ability to achieve these goals.

The formation of a knowledge economy is characterized by an unprecedented spread of information and communication technologies. An urgent problem of contemporary world science is the analysis and evaluation of trends in the dissemination and use of ICTs in the world and in individual countries. The analysis allowed to reveal the following trends: in the countries of the world the consumption of fixed telephones

is decreasing, the number of mobile and Internet users, including broadband and mobile Internet, is growing rapidly.

Ukraine is among the countries around the world in terms of population coverage of the Internet and mobile communications, but lags behind the indicators of higher-quality services. Indicators of young people's coverage of higher education are high enough, which indicates a significant intellectual potential of our country. The importance of continuous monitoring of the processes of dissemination of modern technologies in the economy, identifying the most acute problems and identifying key areas for enhancing the use of ICTs has been proved. This problem leaves much scope for further analysis both in terms of identifying quantitative parameters and in the context of in-depth study of factors and mechanisms for achieving leadership positions in the country.

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CHAPTER 14

RESEARCH OF COMPETITIVENESS OF SOME PRODUCTS OF NATIVE PRODUCTION AT FOREIGN AND LOCAL MARKET

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For the purpose of increasing economic potential of the country and complete integration to EU, also for stabilization of non stable economic situation, maintaining national currency direction and solving social problems, one of the events is the increase of country's export potential.

At various stages of development, various countries apply for various encouragement methods for stimulating export of the country. At initial stage these methods are revealed through the way of using valuable instruments of encouragement like exemption from taxes or determining preferences at export production. Since then when country moves on the higher stage of development the attitude towards the stimulation of export potential. Main accent is already made on not valuable but qualitative indicators. The development of export potential assists the union with various international economic organizations of the countries; these organizations in their turn assist the export of production of their member countries under discount to their markets.

Since 90ies of last century the main export trend of Georgian production was the Russian Federation. This was conditioned by several objective reasons. First of all it is remarkable that Georgian entrepreneurs used to consider that Russian market at certain extent is used to Georgian product which was supported by historic memory; also subject to the Commonwealth certain priorities used to apply to Georgian products. Situation has changed since 2006 which Russian Federation based on its political sign but officially due to the irrelevant quality has taken the Georgian products off from market, basically alcohol drinks and mineral waters. This production occupied the advances place of Georgian export.

In 1996 Georgia applied to WTO requesting to get membership. The Act of Union was signed in October 6th 1999 and after Parliament made the ratification of this Act from June 14th 2000 Georgia became

137th member of WTO. It is remarkable that in August 22nd 2012, after 19 years of negotiation, Russian Federation joined WTO. Certain regulations of WTO clearly request that the borders between these two countries and Customs' check points should be opaque. Despites this, at this stage two Customs' check points are not opaque and between Russia and Georgia still Russia became the member of this organization. Based on the official information of European Commission the agreement is achieved regarding the main issues of mutual format, though still the necessity of solving the diverse issues whether these are the topics related to agricultural product or sanitary-phito-sanitary regulations.

As a result of becoming member of WTO:

- The integration of Georgia was intensified in economic system of the world;
- With joining to the agreement of WTO, Georgian legislative base became more harmonized to European, which is necessary condition for achieving the strategic reason of integrating to EU;
- At international market conditions were improved to export production of Georgia. Georgian entrepreneurs were protected from the discrimination at these markets due to mutual agreements of WTO;
- Georgia accepted the means for legal and objective solution in the field of trading with goods and service;
- The environment for attracting foreign investments were improved because investor has the guarantee for forecasting trade policy for long term period and foreign markets were open to Georgian production;
- Georgia received the complete member's vote for participating in mutual and diverse negotiations of WTO;.

Lots of important agreements were signed under the leadership of WTO which includes the agricultural, sanitary and phito-sanitary events, manufacturing of textile clothes, technical barriers impacting on trade, anti-damping events, regulations of origin of goods, regulations of implementing trade policy, state procurement mechanisms and so on. In April 16th 2002 Georgian Government approved the schedule of events for providing the execution of obligations taken by Georgia in front of WTO, which included the list of those events according to which Georgia had to make the ratification of obligations.

The membership of WTO has its positive and negative sides. From the positive sides it is remarkable that the country may contribute minimal taxable product to 163 countries, the fact that if the country does not manufacture the export production of relevant amount belongs to negative aspects, then it will happen to be under the influence of import that is the advantage which has the membership of WTO. Furthermore, it is possible that country will have to make concession of local market in all. After the tax reform of 2008 in Georgia the import tax basically is zero for the group of imported products, 12% tax impacts on less number and 5% import tax portion on even least amount. The membership of WTO bans the execution of protectionist events towards local production.

Based on the data of 2015-2016, the broadest export production data of Georgia is presented in Fig. 14.1.

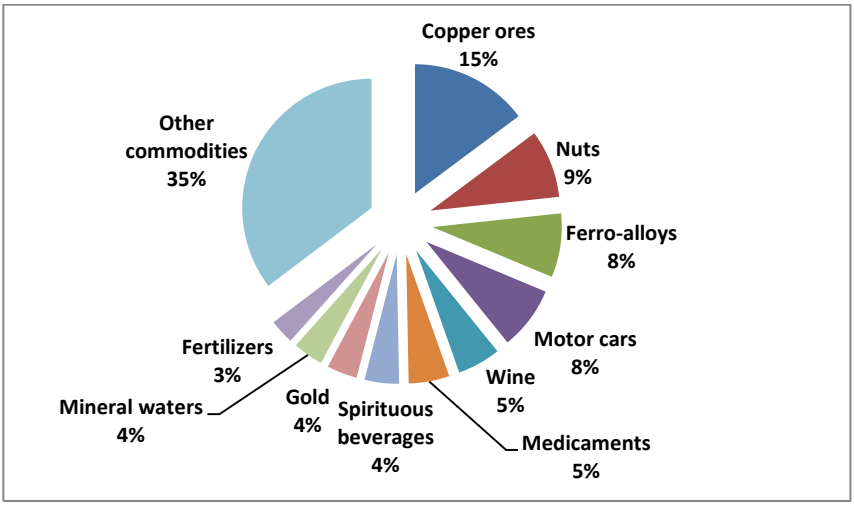

Fig. 14.1. Share of major commodity groups in 2015-2016 (%)
Source: compiled by the authors based on http://geostat.ge.

As it is seen from the diagram, the main export production is Copper ores and concentrates and Hazelnuts and other nuts. This fact means that Georgia is not only the exporter of product manufactured inside

the country but the exporter country of raw material, which is characterized for the low economically, developed countries.

It should be mentioned that Georgia does not use one of the advantages completely which is determined according to the Association Agreement as well as the Articles of Association of WTO. We cannot say that after 2015 (when Georgia signed the agreement with EU) the export indicator was radically increased toward the direction of EU.

The increase of export potential of Georgian products is directly related to the increase of acknowledgement of this product. Those natural advantages which we have, we mean the production of biologically pure food, which is the greatest demand at European market, and we will develop it more. The fact is that some agricultural products, for example honey, at European market is not competitive to foreign one because it does not meet standards.

In June 27th 2014 the Association Agreement "on the one hand between union of European Atomic Energy and EU and their member states and on the other hand, Georgia" was signed. This agreement included the component of DC FTA. In this trend following measures were taken in 2014-2017:

- Based on the situation of 2017, Georgia is added to the list of third countries from which the import of honey, wool and Black Sea fish and fish products to EU;
- In 2017, Georgian Parliament was submitted the legislative modifications' file which aims at the execution of the obligations of DCFTA;
- According to the situation of 2017 more than 10 400 international and European standards are determined for Georgia;
- In 2016 the Agency for Developing Manufacture, subject to state program "Manufacture in Georgia", the assistance of 70 enterprises was made which additionally conditioned the creation of 2 364 new work places;
- In 2015 the consultation group of DCFTA which unites the representatives of nongovernment organizations, professional unions and business associations;
- In 2016 the multi-year action plan for supervision at the market of Industrial and Customer Products had been approved and the project of

Georgian bill was prepared about making modifications to the Code of Safety and Free Circulation;

- In 2014, modifications were made to Georgian bill "about competition and free trade" and the Agency of Competition was established.

According to our opinion, till the production of Georgian manufacturing will move on European market it would be better to make it competitive at local market. During the process of making survey it made accent on the market of soft drinks. Such selection is conditioned by following factors:

- Batumi represents the largest tourist city of the country;
- Tourist potential is revealed not only to the internal tourism as well as towards foreign tourism;
- During summer time there is great demand towards soft drinks;
- Local market presents the products of native production as well as imported ones;
- The purchasing ability of local population and tourists is higher than average;
- All those commercial chains are presents which operate throughout the country;
- The selected products belong neither to the number of luxury things nor the product of primary need;
- From the customers' side the freedom of making selection is guaranteed because the number of manufacturers is rather big;

Due to the fact that throughout the country, the most part of the population's income is limited, the main form of competition is the price one. The person having low income tries to purchase more for fixed amount and in this case the main motto for him in making selection is low price. As it was mentioned above, selecting Batumi as the city for making surveys was conditioned by the fact that during the period of summer tourist season the average income of the population is high and this does not mean that the residents of Batumi in difference with those from other cities or regions of Georgia, get more income, the difference in incomes is basically conditioned by the fact that lots of foreign tourists visit Batumi at tourist season at the expense of whom the average statistic income is increased.

It is justified to think that according to the competition in prices, the production of local manufacturing will be competitive comparing to imported ones, because the import tax and procedural fees are the part of the price of the most imported products which in its turn has to raise the cost of the product. According to Part 1 of Article 197 of Tax Code of Georgia (import tax portions), 12% of import tax is taxable and it applies to fruit juices (including boiled grape juice) and vegetable juices, not boiled and without any alcohol additives, adding sugar or other sweetening substances or without them. Despites, the cost and their portions for providing service are determined by Revenue Service, namely: on the basis of documents submitted electronically regarding the goods by the entity before crossing the border of Customs' area of Georgia filling in the declaration of Customs' office and registration of goods:

- ✓ For the goods having the Customs' value up to 3 000 GEL – 100 GEL for one Customs' declaration;
- ✓ For the goods having the Customs' value up to 3000-15000 GEL – 300 GEL for one Customs' declaration;
- ✓ For the goods having the Customs' value more than 15000 GEL – 400 GEL for one Customs' declaration

Despites the fact that imported products when allocation at economic border of the country are taxed with taxes and fees, and there is no big difference from the product of local manufacturing.

The products taken for our research are manufactured in various countries, with some countries Georgia has privileged commercial terms, and with some of them – no. Despites the fact there is no radical difference in production prices.

Such factors as the efficiency of enterprise and economic potential, output and base of raw material, research-scientific potential, financial condition, concentration of customers image and so on impact on the compatibility of local product. One of the main determining factors is the quality of product but for making the research simple let's presume that the quality of all the products is high and it meets the international standards.

On the basis of survey of these criteria and prices, the table is drawn by us according to whom it is possible to determine basic characteristics of compatibility of Georgia production. Despites the fact that production of one type is taken (natural juices) it is possible to generalize through

various product directions because these problems which obstruct the high level of competitiveness of national production requires the complex attitude.

For research the product of same capacity (1 liter) and placed in same package (paper/glass) is taken which in its turn was placed on counters at various supermarkets. The fruit juices of most title are met in all supermarkets but there are such which are met only in several specific supermarkets.

Table 14.1

Prices of products in various supermarkets

Manufacturer	Country	Price (GEL) 1 liter				
		Goodwill	Ialchin	Wilmart	Spar	Carrefour
CAMPA	Georgia	2,75	3,6	3,5	3,25	-
CHERO	Georgia	-	-	-	-	3,0
KULA	Georgia	3,45	3,85	3,4	-	3,1
Фруктовый сад	Russia	3,1	2,8	-	2,7	-
Parmalat-santal	Italy	6,65	-	6	6,3	4,4
Садочок	Russia	2,6	2,3	2,5	2,7	-
Happy day	Austria	-	4,1	4,0	-	3,95
bravo		-	3,2	3,0	-	2,95
соковита	Ukraine	-	-	-	-	1,95
Моя семья	Russia	-	-	3,15	-	2,4
Sandora	Ukraine	3,7	3,8	3,7	4,3	-
granini	germany	6,95	6,6	7,2	-	-

Source: elaborated by the authors.

Note: prices are taken as of July 19-29th July 2017, various supermarkets of Batumi.

As it is seen from the table, the price of Georgian product has less difference from the price of imported products and from these reasons the main one according to our opinion is: knowledge of brand – Georgian as well as foreign customer wishes to purchase the product manufactured locally and pays less attention to the local production; level of prices – it is possible that Georgian customer purchases native product but this is not enough because there is small difference in price

(in some cases the local product is more expensive), customer purchases imported product and furthermore the selection made by foreign guest stops at imported production; quality – during the process of determining competitiveness belongs to main factor. Though among Georgian customers still the following stigma remains maintained: "the foreign product is of high quality." If we allocate the individual information about prices and criteria regarding competitiveness we receive the matrix of following kind:

Table 14.2

Criteria for evaluating competitiveness

Criteria	Dimension of evaluation		
	low	**average**	**high**
Market share	Черо, bravo, соковита	Фруктовый сад, Happy day, Моя семья	Kula, Кампа, Parmalat-santal, Садочок, Sandora, granini
Price	Садочок, соковита	Черо, Фруктовый сад, bravo, Моя семья	Кампа, kula, Parmalat-santal, Happy day, Sandora, granini
Differentiating factors	Кампа, Черо, Kula, Фруктовый сад, соковита, Моя семья	Садочок, bravo, Sandora	Granini, Parmalat-santal, Happy day
Level of using modern technologies		Кампа, Черо, Kula, Садочок, Соковита	Sandora, Parmalat-santal, Happy day, granini
Acuteness of competitiveness	Садочок, Соковита	Кампа, Черо, Kula, Sandora,	Parmalat-santal, Happy day
Concentration of customers	Соковита, Happy day	Кампа, Черо, Kula, Фруктовый сад, granini	Sandora, Parmalat-santal
Image	Садочок, Соковита	Кампа, Черо, Kula	Sandora, Parmalat-santal, Happy day

Source: drawn upon according to Grandars.ru-ს and on the basis of the authors' calculations.

- According to the fact of holding market share, natural juices of Georgian production they are of high competitiveness because include all the segments of Georgian market. The reason for that is that the distribution chain is rather organized and in order and it is possible

to make its shipment throughout all the regions of Georgia, which is presented in several places. According to our opinion competitiveness of product of Georgian manufacturing is rather high according to this criterion;

- According to price as it was mentioned above, important place is occupied between the competitive strategies despites the fact that we considered the fact that the income of local population and tourists on researchable territory is higher than average as the stipulation for allowance, it is impossible to neglect the meaning of valued competition, customer unconsciously accentuates first on price and then other valuables. According to this factor, the prices of Georgian and foreign products are almost the same which represents certain paradox. The reason is that the juices of Georgian production the prices of which are the same comprise of entirely imported raw material and packaging, the self-cost of which includes the import tax, that's why their price runs behind the foreign analogous product and sometimes exceeds this;

- Under differentiating factors basically the packaging is meant and the packaging of the product taken for survey is more or less different from one another, and more differentiating signs are characteristic to the product manufactured in Europe;

- According to the usage of modern technologies and also all the products are on the same place at initial stage, best position is given to the product manufactured in Europe and as for the Georgian product the same is created under modern technologies;

- According to the acuteness of competitiveness we distinguished those products the cost of which are low (conditionally less than 3 GEL), average (3-4 GEL) and high (more than 4 GEL). According to these criteria, Georgian product is under average dimension;

- Concentration of customers – it is possible to consider that it is in direct contact with the product image because higher the knowledge of product is higher is the concentration of customers. Higher image of foreign production and the concentration of customers is characteristic to the researchable object than Georgian products have and it may be possibly explained with several factors. A) In Batumi as researchable city when the survey was made the number of foreign tourists is rather high which impacted on the existing situation and respectively the image of foreign product is higher. The image of Georgian

production is at average level because its customers are basically Georgian though even they in most cases prefer foreign product.

As concluded it is possible to establish the following evidences and recommendations:

1. Competitiveness of Georgian product depends on realization price despites the fact that the product of local production is in preferred condition comparing to imported (the imported product is taxed(imported products are applied to the import tax and procedure fees), it's less likely to be reflected in the price, the reason is that the local production of researchable products is less including raw materials;

2. In the same or similar prices, the buyer chooses the imported products as the image of such products is high in society, which affects the decision made by the buyer;

3. According to assessment criteria, the products examined by us capture the niche criterion on the national crust;

4. For the competitiveness of the domestic product, the state can not take direct measures, since taxation or non-tax preferences and general protections are inadmissible due to the principle of membership of the World Trade Organization. The role of the state in this case can be limited to the implementation of antimonopoly measures, but we can not say that the natural juice market in Georgia is monopolized;

5. As a recommendation, it may be noted that entrepreneurs should be advised to use local raw materials, and the state may form a reciprocating processing enterprise that will receive fruit raw materials from farmers and cooperatives using local manufacturers. On the one hand it will eliminate the products produced by them and on the other hand will stimulate agricultural production;

6. It is possible to form a trademark production trademark with a state participation, where the balance of supply-demand is presented, which will enable the manufacturer or the buyer to plan the required capacity.

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CHAPTER 15

THE LATEST INNOVATIVE TECHNOLOGIES IN INTERNATIONAL TOURISM

Ihor Ye. Zhurba

At the present stage of development of economic relations, globalization processes covered all spheres of the world economy, including the tourism industry [3, p. 29-31]. Today, tourism has become a "phenomenon of the twenty-first century." It is one of the most dynamic and profitable among all sectors of the world economy.

The global tourism and priority in the global economy are evidenced by quite significant tourism revenues, accounting for 8% of world exports and 30% of international trade in services, and annual growth of world tourist flows by 4-5% [11].

Favorable geographic a location of the country, availability of natural resources, climatic conditions, historical and cultural potential, and people with a high level of education are the main prerequisites for the development of the tourism industry at the domestic and international levels. However, over the past few years, there has been a tendency towards the development of outbound tourism. The competitiveness of the tourist industry of the country is due to the obsolete material and technical base, lack of infrastructure development and skilled personnel, orientation of tourism operators for outbound tourism; ecological problems.

The intensification of the development of the domestic tourism industry and the overcoming of negative trends will become possible through the introduction of innovations into the industry. According to world experience, widespread use of innovations can lead to the creation of competitive tourism products and services in the national and international markets [1]. Innovations in tourism include innovations characterized by the restoration of the physical and spiritual forces of the consumer; qualitative changes in tourist product; development of tourist infrastructure, processes of formation and positioning of tourist goods and services, changes in factors of production.

The operation of the tourism industry is accompanied by a continuous cycle of information, the distribution and use of which

depends on the competitiveness of all elements of the globalized market. New demands of the society on the need for changes in the methods and means of providing tourist services, the need for innovations in the conditions of sustainable development, ensuring long-term contacts with partners and consumers of tourist services using "smart technologies" is an actual scientific and applied problem. The above changes are conditioned by the processes of the development of the information society in the country and its transformation into a knowledge society. Changing the vectors and priorities in the consumer market, the importance of the innovative component in the process of providing tourist services, harmonization of communication interaction with consumers using the latest technologies, require new approaches to the management of cities and hospitality enterprises. In this context, the importance of a scientific study of the effective interaction between destinations and business with a tourist based on the concept of "smart-tourism" (sometimes referred to as "digital tourism").

Research have argued that smart-tourism (sustainable, meaningful, actions that lead to responsible trips) is viewed not as an industry, but as a catalyst for changes that occur when travel participants make steady, tangible actions that make trips responsive and up-to-date.

The needs of modern people in recreation include a number of elements that are combined in the way of achieving goals. In such a way, "smart" tourism is a smart method.

It includes a number of elements such as Internet things (IoT), neural marketing and others that form a holistic communication system of relationships.

The Internet of Things concept is not new and was first formulated in 1999 by the founder of the Auto-ID Research Group at the Massachusetts Institute of Technology Kevin Ashton at a presentation for Procter & Gamble leadership. The presentation talked about how the comprehensive introduction of radio frequency tags (including QR-codes) will be able to modify the logistics chain management system in the corporation.

According to analysts' forecasts, in the coming years, a significant increase in the popularity of the Internet is expected. So, according to Gartner, by 2020, the number of devices connected to the global

network of devices will be more than 26 billion, and revenue from the sale of equipment, software and services will be 1.9 trillion dollars.

Taking into account all these factors, the use of the Internet of things in tourism today is an innovative demand of the present day. An integral part of using the Internet of things in tourism is the digital smart service of service users.

Smart-tourism in practice is implemented not only by the use of computers, the Internet or innovations. An integral element of smart-tourism is neural marketing. This technology is aimed at stimulating consumer demand, which uses the regularities of the work of the human psyche, which, as a rule, are perceived by the client themselves, and sometimes not even anticipated in their own behavior. The higher the effect should be, the more complex the neuromarketing will be.

Recently, Europe and the United States have become increasingly popular with devices that provide secure wireless data transmission, but are multifunctional. The solution to this problem was found in 2004 with the emergence of technology NFC («Near Field Communication» or "NFC" ("communication over short distances"). The essence of technology is high-frequency wireless short-range communication "one touch" which enables the exchange of data between devices, especially smartphones and contactless payment terminals at a distance of about 4 cm. In tourism, the use of these types of interaction simplifies a number of usual operations performed by tourists at the place of stay, such as e-tickets, mobile payments, bonus programs, etc.

Thus, the use of smart-technologies, the Internet of things, neural marketing, and automation software of all business processes of a tourist enterprise today is not just a matter of leadership and the creation of competitive advantages, but also the survival of the services market.

The development of modern tourism largely depends on the development and introduction of something new, aimed at improving customer service and expanding tourist opportunities. So, successful tourism innovators have proven their experience that the creation and implementation of innovation is a guarantee of survival in the most severe competition in the present.

For the first time, the term "innovations" in his modern sense was used by the Austrian scientist J. Schumpeter. He emphasized that innovation - a significant change function produced consisting of a new compound and commercialization of new combinations based on the use

of new materials and components, implementation of new processes, opening new markets, an introduction of new organizational forms.

According to the author, tourism innovations are the result of the use of novelties in the tourism industry with an increase in its efficiency and, first of all, in obtaining a commercial effect that should ensure the stable functioning and development of the industry.

For innovation in tourism are those innovations that accompanied the restoration and development of spiritual and physical strength travelers fundamentally new changes tourism product, increase the efficiency of the components of the tourism industry, increasing the efficiency of the formation, positioning and consumption of tourism products and services, progressive changes in factors of production. An example of such innovations can be: shortening the term of transportation by introducing new high-speed modes of transport - Hyundai high-speed trains; improving the working conditions of the tourism industry (the share of manual labor in food establishments is about 75%, therefore, it is necessary to implement the processes of mechanization and automation); introduction of new progressive methods of converting production factors into services; creation of quality groups for employees to take part in solving topical problems and tasks for improving the quality of tourist services in order to increase the competitiveness of tourist products.

S. Sevastyanova and O. Davydova define eight principles of innovation in tourism:

- Scientific - the use of scientific knowledge and methods for the implementation of innovations, in accordance with the needs of tourists;
- Systematic - the development strategy of innovative tourism development in the region should take into account the factors and conditions necessary to meet the needs of people in recreation and recreation; factors of direct and indirect external environment;
- Matching the innovations to the needs of tourists - offering only those innovations that are really needed by the client, and not those that can be made and implemented by the travel company;
- Positivity of the results - prevention of foolish, unscrupulous creation and introduction of innovations, which can be dangerous for the tourist, tourist enterprise, the environment and society as a whole;

- Immanent to investment processes. In order to carry out necessary research, development and materialization of innovations, investment resources are used, the effectiveness of which is determined by the degree of significance and scale of innovations;

- Conformity of innovation activity and its results to the level of development of society;

- Connectivity - each new product at a certain stage of its life cycle should trigger and stimulate the idea of creating the next innovation and provide financial support for this process;

- Safety - innovation must ensure that no harm is caused to humans and the environment.

Thus, the application of innovations in the tourism sector is aimed at creating a new tourist product, providing unique tourist services, applying new marketing approaches, using the latest technology and IT technologies, which will increase the competitiveness of the tourism product in the national and international markets, will lead to the emergence of new types of tourism.

The degree of innovative development of the tourism industry is determined by market conditions, level of education and qualifications of personnel, availability of resources on the territory under research, first of all, unique resources. Thus, the following types of innovations such as food, technological, marketing, service and organizational-management were the most widely used in the modern tourism practice.

A striking example of food innovation in the tourism industry tours to Antarctica, providing health-improving services in hotels. The Aloft Hotel in Cupertino (USA) has an electronic work-butler mansion that can move around the hotel, call an elevator, deliver towels, drinks, food, newspapers, and also serve as a local guide, which will lead the visitor in the right place for him. The height of the robot is 1 meter, weighs 45 kg, and the speed of travel along the corridors of the hotel is 45 km per hour.

An example of technological innovation in tourism is electronic booking systems in hotels, electronic ticketing systems, and the creation of virtual travel agencies. Thus, Starwood Hotels & Resorts Worldwide has launched the first mobile system in the history of the hotel industry - SPG Keyless. This system allows hotel guests to use their smartphone as a key. The new system will not only help the hotel guests bypass the reception and save waiting time in the queue, but will also provide

instant access to your room at the touch of a button on your smartphone. This innovation will also give the hotel more time to interact with guests, which will become more personal and personalized. The official startup of SPG Keyless took place at the end of 2015 in Starwood hotels under the brands Aloft, Element and W, which are leading network hotels with innovative service, advanced design and environmentally-friendly initiatives. These hotels include Aloft Harlem, Aloft Cupertino, Aloft Beijing, Aloft Cancun, W New York-Downtown, W Hollywood, W Singapore, W Hong Kong, W Doha and Element Times Square. In the first half of 2015, Starwood plans to actively integrate SPG Keyless, and by the end of 2015 more than 30,000 doors can be opened in 150 hotels around the world using this system. SPG Keyless will be available to all Starwood Preferred Guest users who will book a room through any Starwood channel.

The hotel chain Hilton also intensively used similar technology in the scale of its 11 brands (including Double Tree, Hampton Inn, Embassy Suites and Waldorf Astoria). Now the Hilton Honors mobile app allows guests to book a room, and in the near future will be used as a contactless "key" from the room. It should be noted that the Hilton mobile network allows guests to access not only their room but also the doors of the fitness centre, floors, lifts and parking.

Marketing innovations in the restaurant business are quite relevant. If in the last century a new taxing trip from a cafe was called, reservation of tables by phone, a little later was a home delivery order, now it is a cover of WI-FI and an electronic menu, which became a channel for communication between customers and restaurateurs, allowing the administration to quickly edit and update the menu. Thus, the client can make an order on his own, taking into account the pricing policy of the institution, calculating the caloric content of the dishes; immediately see the final order check and, waiting for an order, play games and read the news.

The average cost of the room is 360 dollars per day in one of Stockholm hotels - Nordic Light Hotel. At the end of 2015, it was initiated a new promotion, namely offering accommodation in a four-star hotel completely free for customer, who is an active user of one of the popular social networks, including Facebook or Instagram. For a free week stay at Nordic Light Hotel, Facebook must have 2,000 friends on its profile or 100,000 subscribers. Also, it is possible to count

on free accommodation for those who have 100 thousand subscribers on the profile of Instagram guests whose smaller number of friends can rely on discounts at this hotel.

Social networks are now one way to find candidates for work in different companies. So, the Marriott International Hotel Network has created an online game "me Marriott Hotel", which allows you to manage a virtual hotel. The game was launched in early 2015 on the company's page and in the Facebook social network. Each player will be able to hire staff, purchase products and take orders from the restaurant. For each satisfied customer, the player will receive points that can be lost if the service turns out to be low. The management of the hotel chain believes that such a game will reveal people's interest in the hotel sphere.

Having researched the peculiarities of the development of the domestic tourism industry, the author noted that the country, having enormous potential, significantly lags behind the world leaders, ranking 20th among the countries of the world in obtaining the total annual revenue from tourism activities. So, in the United States, the total annual tourism revenue is $ 100 billion dollars, in Italy, France and Spain is 40-50 billion dollars, and in Ukraine are 4 billion dollars. The annual volume of services provided by domestic tourists is about 1% of the country's GDP (almost $ 500 million), which per capita is 10 dollars. The resulting figure is one of the lowest in Europe.

One of the options for solving the above problems and ensuring the development of the domestic tourism industry is the application of the latest approach, in particular logistic, which involves optimizing tourism flows in tourism, improving the quality of tourism services to world standards, optimizing the use of information and material flows, reducing the cost of production and provision tourist services. One of the innovations in tourism logistics is the "precisely in time" approach at all levels of the tourism industry. This approach is also called the "Pull-System". If in the systems of industrial and trade logistics the initial link is market demand, according to the characteristics of which produce and sell goods but in tourism - the opposite situation.

Tourism determines tourist and recreational resources, according to the logistic potential of which flows of tourists should be formed, and their needs, together with tourist services at the place of consumption, should be ensured through the development of the appropriate tourist

infrastructure. Thus, the "precisely in time" approach in tourism logistics is based on an innovative model of sustainable tourism development. This approach requires proper state policy, in particular financial, since upgrading or upgrading existing capacities is not even feasible for large tourism enterprises. The application of the above-mentioned approach will reduce or eliminate risks of deterioration of the environment, natural resources, and reducing the quality of tourism services. "Pull-approach" can serve as the basis for the creation of a sustainable tourism development strategy in the region.

Thus, innovation in tourism logistics - new solutions in the systems and supply, distribution and delivery chains, includes tourists. Recent innovations in this area -hub systems - is a fundamentally new concept of moving through a single connecting air transport node; integrated destination information systems. The airport is part of the so-called star-shaped network of routes, in which passengers can reach their destination by travelling between flights, making a transfer from one flight to another. Often a hub of the airline is located at its base airport, or the airport of the same city as the head office.

In the network of routes of airlines, nodal points can be formed - airports which are not transferred points, but from which the airline carries out several flights in different directions. Large nodal points are unofficially referred to as "secondary hubs". In many cases, the airport hub is the largest airport in the country (for example, Dubai Airport for the Emirates Airline). An example of innovation in logistics is the community of the tour operator Tez-Tour with the Spanish airline Spanair, which facilitates docking between Russian and European flights at the terminal of the T-1 airport in Barcelona.

The model of economic growth is based on the innovative type of development, envisages a change in the concepts of scientific and technological progress and economic development. New priorities have emerged: intellectualization of production activity, environmental friendliness (green economy), use of high and environmental technologies, etc. This model needs a new state innovation policy to effectively stimulate innovation, develop a science-intensive and reduce the natural-exploiting industries.

Tourism is a multi-threaded and multidisciplinary area and therefore difficult to implement radical innovations. In the service sector, there are industries whose innovation is beyond doubt, because they have

their own research and development base and offer new high technologies to the market. For example, the field of information and computer technology (ICT) aims to virtualization part of production and trading operations, management of economic processes from mega to a micro level, wide application of a variety of applications for effective management and administration of the enterprise.

And while the tourism business is experiencing a boom in informatization, considering the wide information sector, the power and mass of information messages and the virtual sector of travel in global networks, tourism experts point out that tourism is more of a "consumer of information innovation" than a producer. New directions of IT use for tourism are introduction of the mobile Internet, electronic catalogue of offers, distribution of online reservations not only in work with retail agencies but also directly with clients. Extraordinary ideas promoting business in the field of tourism, automation and availability of reference information, the development of new tourist routes, software and software solutions are just some examples that illustrate the innovative activity and the direction of its further development.

The social function of tourism is also widely virtualized. So, social media networks are a powerful tool that affects the consumption of travel services. Tour groups create sites, contact groups for sharing travel experiences, the idea of hotels, resorts, staffing and service levels. There are new ways of tourism activity, for example, tourists from different countries exchange housing for vacation time and for these purposes are registered on relevant portals and united into specific social groups.

Tourists spend on travel about 5-10% of annual consumer spending. Financial freedom of tourists also stimulates the development of innovations and the offer of tourist services: convenient payment systems, not tied to specific places, and do not require the transportation of cash reserves, give a sense of freedom and stimulate the consumption of cultural, educational and entertainment tourism services in the host country.

In the world of tourism, innovations are widely distributed in tourism, aimed at improving the quality of the service received, creating a new need for a comfortable rest, capable of astonishing prudence and complexity. Innovations in transport (a plane with a transparent body), in the hotel business and (hotel and complexes in the islands of

Ukraine), application of energy and resource-saving technologies that can extend the life cycle of a tourism product or reduce the cost of services are popularized.

Innovation is a necessary process for creating a new attractive tourist product, creating favorable conditions for activating the activity of investors in the tourism sector of the country.

At present attractive projects for the construction of tourist and sports infrastructure of resorts and destinations (ski slopes, cable cars, sports and recreation complexes) are attractive. According to the volume of investments in the development of tourism infrastructure, the Carpathian region, which has all the opportunities for the development of skiing, is among the five largest regions of the country (by 2016, these revenues amounted to about 290 million euro). One such project is the ski center construction «Dolyna Runa», which involves the attraction of direct investments in the total amount of 90 million euro.

Considering the level of development of enterprises, including the majority of micro or small tourist enterprises, the following types of innovations should be distinguished:

- Innovative programs and projects;
- New knowledge and intelligent products;
- Production equipment and processes;
- An infrastructure of production and entrepreneurship;
- Mechanisms of formation of the consumer market and marketing of tourist products;
- Organizational-technical decisions of an industrial, administrative, commercial or other nature that significantly improve the structure and quality of production, service and (or) social sphere;
- Raw materials, means of their extraction and processing (for manufacturing enterprises of the tourist sphere: accommodation establishments, restaurant and resort business, etc. ;
- Tourist product at the national, regional level, at the level of the destination, at the level of the tourist enterprise.

However, these areas of change and transformation of the business environment are under the influence of external factors, which significantly affect the intensity of development.

Successful tourism innovators have proven their experience that the creation and implementation of a new one are not only desirable, but

also necessary in a competitive struggle, and in the period of economic instability, it should be perceived as a condition of survival.

Thus, the key to the development of the tourism industry is to create a tourism product that is competitive in the national and international markets, which can satisfy tourism needs as much as possible without innovation. Having analyzed the scientific literature, it was noted that the innovations in tourism are the result of the use of novelties in the tourism industry with an increase in its efficiency and, first of all, the commercial effect.

The main eight principles of the application of innovations in tourism are revealed, namely, the principles: scientific, systematic, the correspondence of innovations to the needs of tourists, the positivity of the results, the immanence of investment processes, the conformity of innovation activity and its results to the level of development of society, connectivity, and security. It is revealed that tourism innovations are the production of new types of tourist products, using the latest technology and technologies, new tourist resources that have not been used before. It is noted that the most widespread in modern tourism practice are food, technology, marketing, service and organizational and managerial innovations.

The author proposes to supplement the variety of innovations in tourism with logistic innovations. The "Pull-Approach" system is presented, which will enable to coordinate tourist flows with opportunities and tourist potential of the studied territory, taking into account the material and technical base of the region and the country as a whole, while not worsening the ecological status and quality of the provision of tourist services.

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CHAPTER 16

INNOVATIVE DIRECTIONS OF INTERNATIONAL INSURANCE OF AGRICULTURAL ENTERPRISES IN UKRAINE

Ruslan A. Pusko

The market economy is characterized by the need for society in insurance protection, which is conditioned by such random factors as the negative impact of destructive forces of nature on the production of material goods and human life, the process of human life as a biological being, the harmful impact of a human economic activity on the natural environment, technological and business risks, interstate and interethnic conflicts, criminal phenomena. In this connection, the need for a well-balanced use of the benefits of insurance protection for entrepreneurial activity, in particular in the agrarian sector, is objectively increasing.

International insurance in the broad sense is a system for avoiding risks in foreign economic relations between countries of the world. In our opinion, the economic content of international insurance is manifested in the functioning of a comprehensive system of economic relations between national economies of the countries of the world community, the main purpose of which is to provide for economic entities the possibility of avoiding or reducing the risks associated with the development of international cooperation in various areas of management, based on the introduction of interconnected insurance products.

In a globalized world, international and national insurance rises to a qualitatively new level of development. It serves as a powerful financial link for the stable functioning of the national economy and directly positively affects the development of international economic and financial relations, contributes to the formation of the global financial space. At the same time, it is worth noting and the innovative specificity of modern insurance of certain sectors of the economy, in particular, agricultural production. Here priority is given to the priority orientation of insurance activity, which inextricably should be related to the implementation of the strategy of development of the agrarian sector of a particular country. It refers to the growth of agric

ultural production, the adoption and implementation of measures aimed at raising innovation and technical support of the domestic agricultural sector, the search for and use of sources of formation of financial reserves, including insurance, aimed at compensating for losses from the occurrence of risks.

In world practice, insurance is the main mechanism for protecting industrial enterprises from the risks of loss of property and incomes, an integral part of the financial system of the state, which mediates the movement of gross domestic product in the form of funds of financial resources. However, this movement is associated only with the redistribution of damages and losses. In addition, with the help of insurance, the redistribution of financial resources between a limited number of participants in insurance, associated with joint and several liabilities for damages is carried out. Therefore, the larger the number of insurance participants is the smaller the redistribution of financial resources because the size of insurance premiums is smaller.

It should be noted that insurance involves the return of insurance funds mobilized to the insurance fund. However, this provision is fair when insurance is considered as a permanent process. Under the conditions of a market model, the economy of insurance is one of the most effective methods of reimbursement of losses as a result of unforeseen circumstances. It ensures the continuity, balance and stability of social development. At the same time, insurance itself must constantly be improved in the direction of seeking innovative forms of its application. This involves improving the performance of insurance operations, full and timely reimbursement of expenses, the use of temporarily free funds of insurance funds, replenishment at the expense of a portion of revenue budgets.

Insurance of agricultural risks in Ukraine today is a priority direction of stabilization and innovative development of agriculture. Unfortunately, the insurance market in Ukraine needs reform. Over the last few years, he has been experiencing a period of rapid growth, but the priorities are largely shifted towards property insurance (insurance), as well as cooperation with banks under the insurance system of borrowers and their property. The agricultural risk insurance segment is not the most interesting for Ukrainian insurers. This is due not only to the complexity of the methodology and the development of insurance products but also to a greater extent with the loss-making of

this type of insurance, the unpredictability of risks. The main sources of risk in agriculture should include the following (Table 16.1):

Table 16.1

Agricultural risk system

Risk type	Risk factors	Effect
Weather	Unfavorable weather conditions, agricultural pests, diseases.	Low yield, decrease in revenues.
Pricing	Market factors in the country and in the world, local and international demand and supply.	Low prices and a decrease in financial revenues.
Livestock producers	Diseases, theft, violation of technological development.	Reducing assets and revenues.
Labor (personal)	Diseases, injuries, disability, death.	Reducing revenues.
Financial	High purchasing prices for raw materials, operating cycle duration, lack of access to credit resources and high interest rates, cash flow problems.	Unknown money flow.
Institutional	Systematic structural changes in the economy, changes in legislation and state regulation.	Changing prices, high taxes.

Source: compiled by the author based on the materials [1].

According to the above data, agricultural production is predominantly affected by natural phenomena such as high and low air temperatures, droughts, freezing, thawing, ice crust, heavy rain, thunderstorms, tornadoes, flurry, hail, which allows for insurance against agrarian risks to be limited to the list the most repetitive and dangerous phenomena. Such an approach to agricultural insurance allows, firstly, rational use of the potential of insurance companies. Secondly, agricultural enterprises are oriented towards the use of innovative types of insurance protection in the agrarian business.

Of course, the range of negative factors affecting the agricultural production of our country is not limited to the ones mentioned above. They can also be added financial, administrative, demographic, and environmental factors. Among the negative factors of the mentioned areas occupy a significant place:

a) Acute shortage of financial resources and raw materials; non-equivalent inter-branch exchange;

b) There is a monopoly position of the purchasers;

c) High level of prices for material and technical means, especially foreign production;

d) Insufficient provision of credit facilities by farms;

e) A sharp reduction of the able-bodied rural population;

f) High loss-making and as a result insolvency of many farms;

g) Deterioration of the quality of agricultural land due to a violation of land tenure and the lack of land ownership rights and the impossibility of mortgage operations for agricultural land.

The main feature of agriculture, which increases the level of risk, is a long period of production. Decisions on production are taken in a year, and even more so by the time of implementation. During this time, the market situation in the state can change considerably in a way unfavorable for the enterprise. Compared to industries that also have a long period of production, such as shipbuilding, farms are in a more unfavorable situation, since all products are not contracted before its production, while shipbuilding products are ordered before production starts and signed contracts In order to reduce the risk caused by this feature of agriculture, there is an urgent need for the widespread use of such an innovative instrument of a market economy as futures [2].

The slow development of insurance in the agrarian sector of Ukraine is explained primarily by the lack of full legislative support, the disadvantages of organizing and coordinating the cooperation of the main players in the insurance market in the agricultural sector. Borrowing of innovative foreign experience in the field of insurance in the agrarian sector can be considered as one of the ways to solve existing problems. However, using this approach, it should be borne in mind that the innovative experience of other countries, moved to a completely different geopolitical, civilizational, political and economic environment, can lead to negative consequences, increasing the existing imbalances in the agrarian segment of the insurance market. This is explained by the fact that any borrowing of innovative foreign experience begins to interact with the already existing system of the country in a particular field, and therefore the historical and historical synthesis should be considered as the best and most optimal

consequence of such interaction, that is, when innovative borrowing is combined with the domestic experience, complementing it.

At the same time, there is a lack of financial resources from farmers, and at the level of government allocations, there is not always adequate opportunity to support the insurance of agrarian production. Under such circumstances, one of the main problems of solving the problem of creating adequate financial resources for insurance of agrarian risks in our country is by combining the capacities of the government and the insurance business structures, both national and interested foreign partners from the public and private sectors, international organizations.

Considering the rather complicated economic, political, a financial situation that has recently developed in our country, it is worth noting its negative impact on the stability of the functioning of the insurance system of domestic agriculture, which, in a globalizing environment, has more opportunities to take advantage of the innovative world experience, assistance international organizations. At the same time, the disadvantage is that, at various levels, specialists in the field of insurance of the agricultural sector of our country do not have the necessary professional knowledge for the formation of the system of international insurance of agriculture. A significant obstacle to the innovative development of international insurance of the agrarian sector of Ukraine is the existence of a number of bureaucratic requirements for the allocation, distribution of funds for subsidizing farms in order to prevent, avoid risks, reduce and compensate for losses in agricultural production.

Factors influencing the innovative development of insurance activities in Ukraine, it is advisable to divide them into two groups. The first group should include those that characterize the demand of the population for insurance services: low solvency of potential buyers of insurance products, distrust of insurers, lack of awareness of the development of the insurance market and available insurance products. The second group combines those relating to the activities of insurance companies. It is expedient to distinguish between internal and external factors in this group. The existence of internal affairs depends exclusively on policies and management of insurance companies, external ones are the result of the insufficient efficiency of state regulation of insurance activity.

Despite the fact that in a market that is accompanied by a variety of risks, the importance of insurance is growing as an important means of protecting the property interests of agricultural producers, in Ukraine, the insurance market remains undeveloped. In Ukraine, insurance against a variety of agricultural risks is carried out by individual insurance companies, as well as the association of insurers - insurance pool. In the market for classic insurance of agricultural risks its presence is declared by about 50 insurers, real insurance contracts are concluded at best, the top ten insurers. The services of insurers are unevenly represented. For example, in the central regions of Ukraine, the insurance market has a sufficient supply, and in the western regions, it is still not well developed, which reduces the competition between insurance companies, and, consequently, the quality of their services.

The greatest problems of the modern state of innovative development of insurance of agricultural products are:

1) The imperfection of the legislation regulating the activity on insurance of agricultural products;

2) Uncertain and not fully implemented state tasks regarding risk management in the agrarian sector through mechanisms of state support for agricultural products insurance;

3) A low volume of insurance services that meet the needs of agricultural producers;

4) The lack of information necessary for the calculation and management of risks, as well as the lack of an affordable and efficient market for reinsurance of agricultural production risks, which results in high insurance rates;

5) Insufficient level of standardization of insurance products, the availability of which allows providing additional opportunities for protecting the rights of agricultural producers who have a low level of insurance awareness;

6) Low level of awareness of agricultural producers about agricultural insurance. Insurance is perceived by agricultural producers as a compulsory means for obtaining a bank loan and/or state subsidy, which determines their low demand for insurance;

7) The existence of mutual distrust among insurers who do not have sufficient information to calculate tariffs and producers of agricultural products who are not sure of the receipt of insurance indemnity;

8) High probability of the necessity of providing direct state aid to agricultural producers in the event of an emergency occurrence for them.

Solving these problems of innovative development of domestic agriculture and its insurance protection urgently needs a significant improvement of the regulatory framework for their functioning. In the context of the expansion of international relations of Ukraine in the agrarian sector, in our opinion, the question of studying and using in our practice of innovative agricultural management the provisions of legislative acts of the world, international organizations regulating insurance activity in this area is an important issue. These are, first of all, the prevention, reduction of systemic risks, application of the newest insurance products, methods of expanding the range of insurance business partners, conducting relevant expertise, prompt replenishment of the information base, transparent and purposeful financing of insurance programs, the formation of an effective system of protection of agrarian enterprises using insurance companies services.

It is worth noting that in the domestic legislation, of course, there are documents that are aimed at supporting national agriculture and the innovative development of its insurance protection in modern conditions. These include, firstly, the Law of Ukraine "On State Support to Agriculture in Ukraine", as well as the provisions of the Program of Activities of the Cabinet of Ministers of Ukraine "Ukrainian Breakthrough: for people, not politicians" and the Decree of the President of Ukraine No. 890/2007 "On some measures for the development of the grain market". These documents outline a number of measures to improve agricultural risk insurance: the development and adoption of a national program for the development of agricultural risk insurance; functioning of the State Agriculture Risk Management Agency to ensure the development and improvement of the risk insurance mechanism; insurance of agricultural risks as a prerequisite for providing appropriate types of state financial support to agricultural producers; creation of a fund of agricultural risk insurance with the participation of the state; definition of agricultural risk insurance as one of the types of voluntary insurance; establishment of additional requirements for insurers that will carry out insurance of agricultural risks, insurance premiums (contributions) which are paid with an attraction of budgetary funds [3].

In the context of the formation of an innovative system of insurance protection of agriculture in Ukraine, it is worth noting its international component, the opportunities for strengthening which gain real weight, first of all, for the membership of our country in the WTO, and the implementation of the sectoral provisions of the Association Agreement between Ukraine and the EU. Expansion and intensification of international cooperation of Ukraine in the field of an insurance business, use of the potential of the world market of insurance services should contribute to the formation of a system of international insurance protection of domestic agricultural enterprises. Of course, this is possible if we overcome the difficulties in our country, economic, financial, reform of the legal framework for insurance of agriculture.

The development of conceptual lags and the strategy of innovative development of international insurance protection of agricultural enterprises of Ukraine, in particular, with the justification of the financial interaction of the state, representatives of foreign capital and private insurance companies, is important and extremely necessary taking into account the international conditions and national interests of Ukraine. At the same time, the latter can become an important tool for reform, because insurers know the strengths and weaknesses of clients and have some experience of market transformations.

Regarding the formation of the legal and regulatory framework of the innovation system of the international insurance of agriculture of Ukraine, it is appropriate here in the national strategy of development of this sector of the economy to emphasize the implementation of international rules, principles used by countries of the world community, summarized in the documents of international organizations in terms of the profile of agricultural insurance and the realization of which is the practice of agricultural insurance gives positive results. Here, in our opinion, first of all, the following principles of international insurance of the agrarian sector should be used on the long-term basis of the innovative strategic development of domestic agriculture and its insurance protection. First, it is compliance with the international standards for agricultural insurance risk rates. Secondly, the formation of state programs for the financing of insurance protection of farms. Thirdly, it is the strict regulation of the conditions for the interaction between insurers and policyholders. Fourthly, it is the formation of a system of training highly skilled insurance business, with

the mandatory condition of obtaining them a wide range of applications of international insurance services. Fifthly, it is the constant introduction of world-wide innovative insurance products in agriculture in Ukraine.

In order to provide a favorable environment for the development of an innovative system of insurance of agricultural risks, it is necessary to improve the current legislative and regulatory framework. Agro-insurance is unique compared to other types of insurance. Therefore, there is a need for the adoption of a special law on agricultural risk insurance, as well as amendments and additions to a number of laws related to various components of the system of agro-insurance, including the state program of cheaper insurance premiums in the field of agro-insurance. The purpose of these changes is to provide a clear definition of authority; integration of agricultural risk insurance into the system of the State Agrarian Policy; compliance with the requirements of the relevant international trade agreements of insurance programs supported by the state; simplification of participation in subsidized insurance programs for agricultural producers; transparency of actuarial calculations and risk assessment, data collection and management, consumer confidentiality and consumer protection; legislative determination of the legal basis for the functioning of the Agriculture Risk Management Agency as a framework in which the principles of partnership between the public and private sectors are implemented.

Considering the historical periods of development of this process in our state, we can distinguish three of its stages. The first stage of compulsory crop insurance took place under a totalitarian regime, where all operations were carried out through the system of state insurance. The second stage falls on the first years of Ukraine's independence. During this period, only state-owned agricultural enterprises were covered by compulsory crop insurance. The third stage of this process begins with the adoption of Resolution No. 1000 in 2002, which provides for the introduction of mandatory crop insurance for enterprises of all forms of ownership [4].

An important feature of the international innovation insurance of agricultural enterprises is that the partners in insurance cooperation, given its binding nature, no longer interact in the direction of expanding the package of insurance products for each client. However, it should be noted that compulsory insurance also has a number of shortcomings:

it requires significant budget funds; contradicts the idea of free enterprise; finances the damage to the economy of risky regions at the expense of farms operating in a low-risk area; compulsory insurance in the absence of public funding turns into a kind of additional tax on agricultural producers.

Mechanism of agro-insurance needs to be substantially improved. The problems of the formation and implementation of the insurance mechanism, in our opinion, are as follows. As the main problem, one can distinguish the strict regulation of the activities of licensed insurance companies, which under obligatory agricultural insurance must cover all the enterprises of the industry, despite their profitability. At the same time due to the lack of insurance resources, including because of the difficult financial situation of the country, inflation, instability of the national currency, difficulties arise both through the formation of insurance funds and in the direction of compensation for losses in the event of insurance events. As acute problems inherent in a domestic insurance business in agriculture, one should note the lack of professional training of insurance company employees, lack of proper information on the potential and state, grounded perspectives of development of agrarian enterprises.

Another important fact is that, as the foreign innovative experience shows, big companies are operating more stable and effective in the field of an insurance business. Regarding the involvement of small businesses in the insurance of agriculture, the range of factors that lead to their failure to fulfill their immediate responsibilities to clients and the time and conditions for bankruptcy is significantly increasing. Foreign innovation practice shows that only powerful companies that have branches and can be insured in the whole of Ukraine should operate on the insurance market. Small insurance companies will be unprofitable if their risk insurance operations are carried out in regions where the probability of occurrence of an insurance event is very high. In a context of increasing involvement of foreign companies in the insurance business of agriculture in Ukraine, it is worth liberalizing the conditions for their functioning in the domestic insurance market, which will increase competition between them and national insurers. It is worthwhile in the mechanism of innovative international insurance to strengthen the component of reinsurance in the agrarian sector. For foreign reinsurers, the method of reinsurance should be clear. Very

often the criteria of western insurance companies do not coincide with Ukrainian ones. This, in particular, relates to the value of the insurance tariff. Worldwide, agricultural risks are the most complex and the tariffs on them are high. In Ukraine, in order to encourage agrarians, insurance rates remain low.

When implementing the innovative insurance protection of agriculture it is worth noting the existence of a number of problems and the policyholders. Agrarians are not always aware of the terms of the insurance agreement, do not pay due attention to those provisions that contain their rights and responsibilities. Therefore, it is in purely psychological terms that the basis of the emergence of conflict situations between them and insurance companies. In addition to psychological, an economic factor is also important. Agrarians are now in a situation where every year, often in the spring, they have a dilemma: to buy quality seeds, fertilizers or to allocate insurance for insurance. The lack of an effective long-term loan makes it impossible for the working capital to suffer.

Investigating the problem of the peculiarities of the innovative development of the domestic system of insurance protection of agriculture, it must be emphasized that in the conditions of globalization of the world economy it cannot function in isolation, without taking into account the trends of the evolution of international insurance of the agrarian sector, especially in developed countries and integration groups. In view of this, the essential features of innovative insurance of the agrarian sector in Ukraine, of course, must be transformed and approach the norms of its action in the states of the world community. This concerns the reform of management in the insurance business in the agrarian sector, raising its qualitative level to the requirements of the most economically developed countries of the WTO. Then we should also consider the innovative role of insurance companies in the implementation of exporters and importers of agricultural products by insurers. Of course, international export and import accounts contain specific articles on insurance of cargoes, transport, insurance guarantees, etc. But bearing in mind, for example, the export profile of agricultural production by a public or private agribusiness, insurance companies must take on increased responsibility towards policyholders in order to timely implement their customers' export contracts.

It should be added that the directions of the innovative development of international insurance of agriculture in Ukraine include not only the efforts of domestic insurers to reach the level of functioning of foreign companies and to be worthy of their competitors. When forming a new competitive environment, the representatives of the international insurance business operating in our country must thoroughly study the specifics of Ukrainian agriculture development, its management, and regulation of its activities by the relevant national legislation, natural and climatic conditions, traditions of production, first of all, plant growing and animal husbandry, the state of logistics of agriculture. In particular, in our country's crop production, the greatest risks associated with obtaining a proper crop in the areas reserved for grain crops. Here the importance of innovative insurance increases because of these crops allocated more than half of the territory of domestic agriculture. In the mechanism of agricultural insurance distinguish two concepts: harm and loss. The first is damage or destruction caused by natural disaster or accident. When destruction exceeds 10% of the value of property or product valuation, they are called extraordinary damage. The second is the reduction of the expected yield or productivity due to the total or partial destruction of the means of production, the funds for the restoration of damaged property.

Compliance with the strategy of innovative development of agrarian insurance dictates the need for a systematic approach to its development. The system approach involves defining and drafting the forms of interaction between the three main actors of agricultural insurance - agricultural producers, insurance companies and the government. In our opinion, there are several areas that need to be developed in parallel. It means, first of all, the development of an optimal innovative strategy for the development of insurance for agricultural crops, the creation of conditions for the functioning of mutual insurance societies, the provision of a reserve fund for the accumulation of non-insurance risks that should be used for such purposes, as well as effective and transparent procedures reimbursement of state programs. Important areas are also the perfection of information, voluntary participation in insurance and the development of insurance against individual risks.

An important innovative direction in optimizing the insurance of enterprises in the agrarian sector is the use of foreign experience in

building an effective system of insurance relations. The insurance system in each country is unique because it is formed for a long time and is under the influence of a lot of specific factors. From our point of view, the optimal is the rational interaction between the private and public sectors, which allows the state to minimize the cost of agro-insurance and focus on the implementation of purely state functions of agricultural production management by supporting the production of priority agricultural products through subsidies for pre-mediation insurance. In addition, the involvement of the private sector in the implementation of the program provides competition in the segment of agro-insurance and increases the responsibility of the private sector. At the same time, the state ensures the fulfillment of its direct functions in creating a legislative field for the development of the system of agro-insurance, regulating the activities of insurance companies and ensuring the maximum effective use of agro-insurance as an instrument for implementing agricultural policy. According to international innovation experience, administering the program of subsidizing agro-insurance is rather complicated, so in most countries of the world community, the state also creates special bodies or structures that serve as program administrator. The need to create a separate body is due to the fact that it is needed to exercise control over the use of funds allocated by the state for subsidizing agro-insurance.

However, if we summarize the existing foreign innovation experience, then it should be noted that in international practice there are two models of insurance, which can be given the conventional names "American" and "European". The main characteristic of the first is the wide participation of the state in supporting the insurance of agrarian risks. The central element of state support is the provision of a subsidy to pay part of the insurance premium, which reduces the cost of insurance for agricultural producers and, consequently, provides massive insurance coverage. The European innovation model can be characterized as private. It is about minimal intervention by the state, as well as the fact that agricultural producers are buying an insurance policy at its full cost. Both models have their drawbacks. The disadvantages of the "American system" include the administrative costs and the difficulty of controlling the moral hazard, that is, the availability of insurance protection will reduce the insurer's motivation to avoid or prevent a risk, which increases the likelihood of losses.

As a result, insurance companies have a high loss record for this type of insurance. As for the private "European" model, among its shortcomings, it is possible to note the insecurity of the insured and the limited possibilities of system development.

The final choice of innovation model for Ukraine should be based on international experience, country specifics, and the purpose of introducing a subsidized agro-insurance program. For a faster development of the innovation system and the provision of additional support to agricultural producers, it is advisable to choose a model in which a partnership will be established with the active participation of the state and the private insurance sector. According to the WTO rules, the proposed model will better meet the requirements for granting state subsidies to the agrarian sector.

It should also be noted that foreign and domestic investors are interested in investing in innovative export-oriented segments of the agrarian sector of the economy, but they need to protect their investments. In this regard, the presence of effective insurance can play a positive role. Even under the existing system of today, insurance companies in cooperation with the state can provide this protection, which will significantly accelerate the process of modernizing agriculture in Ukraine. In our opinion, the optimum model for Ukraine is that it involves the active participation of the state in the organization of innovative insurance activity in the agricultural market. This involves the implementation of such measures. First, the legislative definition of the interaction between the private sector and the state, the introduction of effective mechanisms for financial support to agriculture will reduce the burden on the state budget and make such a load predictable and manageable. In addition, the use of experience and a developed territorial network of insurers will save significant funds for the development of agricultural insurance infrastructure. Secondly, providing the state with an adequate support would allow reducing the systemic problem of shortage of working capital of agricultural producers by providing a state subsidy for as much of the insurance premium. Thirdly, the creation of a reliable mechanism for insurers to fulfill obligations to agricultural producers under concluded insurance contracts.

The research of the problem of using innovative international experience in insurance of domestic agrarian enterprises allows us to

draw the following conclusions. Firstly, at the present stage of development of the domestic economy, the issue of innovative reforming of the insurance of the agrarian sector becomes especially relevant, especially in the context of Ukraine's accession to the World Trade Organization. In the conditions of WTO membership, insurance became of particular importance as a system for optimizing the development of domestic enterprises in foreign markets, in particular, in the agrarian sector. For the domestic agar complex, the accumulation of foreign innovative experience in the field of insurance and the use of those positive aspects that correspond to national conditions of economic, social and political development is important. The experience of the WTO member states can be viewed from a rational and critical point of view. Of course, the benefits of insurance protection for agriculture applied in economically developed countries deserve attention, careful study and application in the agrarian sector of Ukraine. However, their implementation in domestic agro-insurance should be sufficiently substantiated. Under this condition, it is possible to count on the increase of the innovative level of insurance protection of agricultural enterprises of Ukraine.

Secondly, ensuring the rational functioning of the innovative system of insurance protection of agrarian enterprises, which takes place in economically developed WTO countries, shows that the state plays a significant role in this process. It is the government structures of the WTO Member States that deal with agricultural insurance, are developing state-funded innovative financial support programs for the farming sector, form the effective legislative framework for this business and provide it with appropriate information support. Therefore, the role of our state in the innovative insurance of agricultural production risks undoubtedly should also be the development and implementation of legislative and regulatory documents in the field of agricultural insurance, control over their compliance and implementation; creation of favorable economic, political and social conditions for the development of insurance of agricultural commodity producers; contributing to the creation of favorable conditions for the reinsurance of risks on the domestic insurance market.

Thirdly, from the point of view of the possibilities of introduction of innovative international insurance of domestic agriculture in Ukraine, it should be noted that the national market of agro-insurance is now in

the stage of formation and, of course, the old, traditional principles, forms and methods are in effect. Therefore, in this area of an insurance business, innovative reform should cover its legal basis with the widespread use of relevant legal instruments of the WTO and the member countries of this organization. We also need to improve the structure and structure of the insurance industry in our country's agriculture, among which priority sectors should be occupied by relevant state institutions and large insurance companies. Finally, the international innovative insurance protection of Ukrainian agriculture can be effective provided that foreign capital is involved in this business, including international monetary and financial organizations, and, undoubtedly, there must be mandatory, clearly defined terms and volumes, financing at the expense of the state budget of Ukraine.

Fourth, innovative agro-insurance should be available to a wide range of agricultural enterprises. At the same time, it is necessary to take into account the interest of farmers in compulsory insurance of agricultural production, which in certain circumstances objectively ignores the level of development, first of all, small and medium-sized farms, and their financial difficulties. Therefore, it is advisable to develop a concrete innovation scale of insurance premiums for farms, taking into account the climatic zone of their agricultural activities and directions of the latter. In this situation, it is necessary to use the international capabilities of our country as a member of the WTO, as well as the advantages of innovative forms, methods, tools, levers of cooperation in agriculture with the EU, which gives a new impetus to the extension of the Agreement on the Association of our country with this integration association.

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CHAPTER 17

FEATURES OF UKRAINE ELECTRONIC COMMERCE DEVELOPMENT IN GLOBALIZATION CONDITIONS

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Modern determinants of world economic development dictate new conditions for the implementation of business relationships. Increasing competition, globalization of markets, rapid scientific advances in the field of communications and information technologies make entrepreneurs search for new innovative methods of economic activity. In these conditions, the use of e-commerce tools becomes one of the most important factors for ensuring competitiveness. The active development of information technology, violent transformations in the field of Internet technologies and a steady desire for communication open up new opportunities for enterprises to carry out economic activity.

Every year, more and more companies are turning to e-commerce benefits, which allow them to improve their profitability, enhance their image in the eyes of potential and key buyers and business partners, and quickly enter new, previously unattainable markets. In addition, the development of information technology in the early twenty-first century has radically changed the approach to management and organization of foreign economic activity. Access to the resources of the global Internet information network opened up new opportunities for international commerce. Currently, the functioning of a single Internet information network causes the formation of globalized communities, which significantly affect the economic life of society - the era of international e-commerce.

Distribution of the Internet, increasing the number of its users, stimulated the development of regional and world e-commerce. However, different levels of socio-economic development, the quality of infrastructure objects had a significant impact on the introduction of e-commerce mechanisms in the system of economic relations in the world. It is precisely the study of peculiarities and the definition of general tendencies in the development of international e-commerce that

allows predicting further transformation and establishing the basic determinants of its formation and development.

International electronic commerce is at the present stage as a set of economic relations between actors of different national economies on the exchange, distribution, and redistribution of benefits through the use of computer technology in the first place as an instrument of information exchange and acts as a natural consequence of scientific and technological progress, and also profound changes in the structure of global consumption.

The key influence on the development of international e-commerce was caused by two groups of factors. On the one hand, the use of global electronic networks has become a leading role for the transmission and exchange of data during business operations. It became a norm already in the late 60's of the twentieth century. The emergence and spread of the Internet have radically influenced the business as a whole, allowing to expand the range of commercial relations through the Internet. Since then, e-commerce has become part of everyday relationships between individuals and entities of different national jurisdictions. In the field of international commerce, in particular, global information technologies and the electronic networks of high-speed data transmission formed on the basis of them, form new forms of social relations between producers, intermediaries, and consumers of goods and services in the international arena. So e-commerce trade allows companies to more efficiently and flexibly carry out cross-border transactions, interact more closely with global vendors, and respond more quickly to customer requests and expectations. Companies have the opportunity to choose suppliers regardless of their geographical and political boundaries, as well as the ability to access their products and services on the global market [8, c. 88].

On the other hand, consumers in the conditions of the formation of the global economic space have formed new, increased expectations about the goods and services they offer in the form of both a material product (real commodities) and services in the form of individualized needs. Every single consumer is more and more in demand only for such a product, which is adapted and produced in such a way as to satisfy certain individual consumer needs (individualization of needs); Delivered in the most suitable way for the consumer (personalization of

the service); Delivered only when the consumer wants to receive it (individualization of the time of satisfaction needs).

As a result, the relationship between consumers and producers in the international arena has undergone significant changes. If in the previous stages of the development of the world economy, the most important criteria for demand for goods were mainly price and quality, and then the above-mentioned factors become more and more important. It is a complication of relations at the global level, on the one hand, and, on the other hand, on individualization as one of the forms of strengthening the diversity of the external market environment in which actors of international trade act [17, c. 6].

Despite the new opportunities and rapid growth of the electronics sector of the economy, its theoretical base is still under development. This is evidenced, for example, by the fact that so far there is not even a commonly used terminology in this segment of entrepreneurial activity. In particular, there are currently no generally accepted definitions of "e-business", "e-commerce," "e-commerce trade" and other related concepts. Basically, this situation is due to the novelty and scale of these phenomena.

By definition, UNIDO (United Nations Industrial Development Organization), business has four main components: marketing, production, sales, and payments. If two or more of these components are implemented using electronic systems, the business is considered electronic.

International organizations use their own interpretations. Thus, in the WTO under the "e-commerce" refers to the production, advertising, sale and distribution of goods through telecommunication networks. In the materials of the OECD countries (Organization for Economic Cooperation and Development), it is defined simply as the use of electronic means (telephone, fax, TV, Internet, etc.) for the conduct of commercial activities, including the commercial activity of natural and legal persons, which are based on the processing and data transmission in digital form, as well as text, audio and video transmission [27].

The Model Law on Electronic Commerce, 1996, developed by the United Nations Commission on International Trade Law (UNCITRAL), states that the term should be interpreted extensively so that it covered issues arising from all commercial relations both

contractual and non-contractual. E-commerce, in accordance with the Model Law, should not be restricted to the sales framework, as it covers a range of commercial civil cases filed electronically via the Internet or through electronic networks [16].

The notions of "e-commerce" and " e-commerce trade" are most often used as identical. Meanwhile, e-commerce is not limited to buying and selling operations and computer networks (e-commerce), it covers a wide range of commercial relationships, which does not allow the identification of e-commerce and e-commerce trade. Proceeding from the predominantly commercial (value) relations that are covered by e-commerce, it can be argued that e-commerce is, first of all, one of the forms of entrepreneurial activity, which is mainly expressed through intermediary and procurement electronic activity for the purpose of obtaining profit and carried out electronically.

E-commerce facilitates the acceleration of most business processes by conducting them electronically, in which information is transmitted directly to the recipient, bypassing the stage of creating a paper copy at each stage. The term "e-commerce" combines a variety of technologies, including EDI (Electronic Data Interchange), e-mail, the Internet, cluster (information exchange within the company), extranet (information exchange with the outside world). E-commerce enables companies to more effectively and flexibly performs internal operations, interact more closely with suppliers, and respond more quickly to customer requests and expectations. Companies receive, on the one hand, the ability to choose suppliers, regardless of their geographical location, and, on the other hand, the ability to access their products and services to the global market.

The effectiveness and competitiveness of e-commerce are based on the use of information and telecommunication technologies. Its characteristic features at the present stage of development of the world economy are:

• Automation of the company's main business processes (resource accounting, accounting, document management, support for management decisions), based on the creation of automated workplaces designed to automate individual operations and their integration into the corporate information network;

• Reorganization of the structure and main business processes of the company on the basis of information and telecommunication technologies;

• Development of network interaction with existing and potential business partners, as well as with clients (Fig. 17.1).

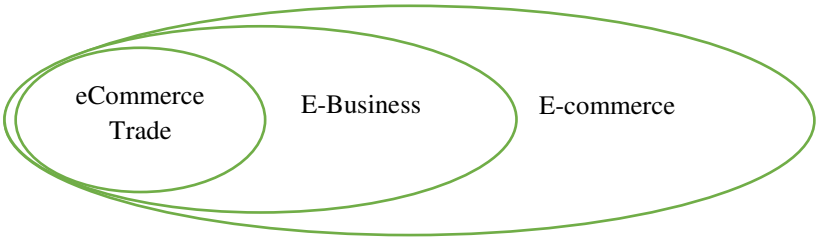

Fig. 17.1. The notions relation structure of the eCommerce Trade, E-Business and E-commerce

Source: compiled by the author on the basis of [2; 4; 18].

Consequently, under the electronic business should mean any information exchange using modern information and communication technologies. E-commerce is a type of activity aimed at gaining profit from the conduct of transactions in electronic form. E-commerce trade is a kind of trading format, in which commodity transactions are carried out on the e-commerce market.

At the same time, electronic commerce has a number of inherent features characteristic to it (attributes), in which social and economic essence is expressed. At the same time, this category is multifaceted and can be characterized in different hypostasis: both as a set of economic actors, and as an infrastructure, and as a type of market, and as an institutional form. At the present stage, e-commerce is a component of the "virtual economy", which is one of the most important elements of the so-called new economy, which includes:

1) Electronic trading systems (the core of e-commerce trade) - electronic trading platforms and means of communication between sellers and buyers, include online auctions;
2) Electronic payment systems;
3) Electronic systems for the delivery of goods and services;
4) Arbitration based on electronic technologies;

5) Electronic capital market;

6) Electronic international exchanges (commodity, stock, currency) [3, p. 20].

In addition, the "new economy" also includes research and production in the field of innovative technologies, which, in fact, are the foundations of this kind of economy. It is thanks to the development and production of innovative technologies, the latest technical means and the emergence of e-commerce as a basic element of the new virtual economy.

The process of globalization and the achievement of scientific and technological progress have opened new opportunities for economic development, namely the development of international e-commerce and the formation of information production. The emerging virtual economy is objectively predetermining the creation of a system of electronic relations between private companies, the state and business, the state and the population, and the electronic system of international relations.

E-commerce requires a comprehensive solution to the problems of legal regulation. The adaptation of national legislation to international standards is now extremely important. For the purpose of effective legal regulation, first of all, it is necessary to develop common rules concerning electronic business activities (electronic document circulation and electronic signature, determination of the procedure for the implementation and acceptance of electronic communications, setting the time and place of receiving and sending messages, identifying the sender and the addressee, ensuring security exchange of electronic messages, streamlining of tax, customs and currency legislation, etc.). The regulation of e-commerce as an activity that cannot exist without the use of modern technological developments in the field of telecommunications should be based, first of all, on the rules governing communication and information exchange. However, within the framework of international law, the unified system of regulation of communication and information transfer has not yet been formed. The regulation of identical relations traditionally focuses on various areas of international law, and the only subject of regulation is the implementation of communication, which has been divided between different sections of international law, a unified legal regime for the international exchange of information, unsystematic and significant

differences in the international legal regulation of various types of communication.

At the present stage, there are several certain levels of legal regulation of economic relations on the Internet: international; regional (within the framework of the European Union); national. At each of these levels, the legislator seeks to regulate a certain area of legal relations. This determines the need for international legal regulation of legal relationships on the Internet, that is, the unification of existing rules. Unification of norms is carried out both within the framework of the EU and internationally within the framework of the United Nations (Institute for the Unification of Private Law), the World Intellectual Property Organization; International Chamber of Commerce; UN Economic Commission for Europe; UN Center for Trade and E-Business. Annually, Internet Corporation for Assigned Names hosts international conferences on the issue of unification of regulations aimed at regulating the Internet.

The UNCITRAL Model Law on Electronic Commerce is central to these documents. The law was prepared during 1985-1996 by the United Nations Commission on International Trade (UNCITRAL). His goal is the unification of the laws of the states, in accordance with the requirements arising from the development of telecommunication technologies. The law consists of two parts - electronic commerce in general and e-commerce in cargo transportation, which defines the main functions of the electronic contract, which include: readability; immutability; the ability to make copies; authentication by electronic signature; ease of storage [31].

Another document - UN General Assembly resolution A/51/628 of 30.01.1997 recommends that states when drafting legislation "take into account the provisions of the Model Law because of the need to unify the legislation applicable to alternative paper forms, methods of transfer and preservation of information" [33].

For the purpose of convergence of state law (USA), the National Conference of State Law Unification Officers in 1999 developed and transmitted for the discussion and adoption the Uniform Electronic Transaction Act (UETA). Transactions in UETA are actions or set of actions that occur when two or more persons interact in the field of trade or are in administrative relations [32].

A similar approach can be found in the EU E-commerce Directive. The Directive regulates relations in areas such as the recognition of electronic contracts, the recognition of the electronic force bargaining power, the online contracting procedure, and the minimum requirements for providing information by contracting parties (essential terms of an electronic contract), the responsibility of intermediaries (intermediary service provider) for sending, receiving or saving electronic documents, providing access to the network, as well as informing the participants of the agreements on the technical side of the conclusion of agreements in electronic form [20].

Like the American law, the aforementioned directive provides for the principle of non-discrimination (contracts in EU countries should not be denied legal validity on the grounds that they are enclosed in electronic form). Consequently, the EU directive and the Uniform Law of the United States take into account the recommendations contained in the UNCITRAL model law, supplemented and developed in accordance with the specifics of the national legislation. The next step in this direction was the adoption of the UN Regulation on Electronic Data Interchange in Management, Commerce, and Transport (UN / EDIFACT, 1988) [30].

Together with international organizations (the UN Center for Promotion of Trade and Electronic Business, the United Nations Center for the Promotion of Procedures and Practices for Management, Commerce and Transport, the United Nations Economic Commission for Europe (UN / CEFACT), the Organization for the Promotion of Standard Information (OASIS)) in 1999 Efforts have been combined to develop an international standard for XML (Extensible Markup Language) for e-business (ebXML), a technical basis for unifying the exchange of commercial electronic data.

At the moment, electronic document circulation is of great importance for the development of international e-commerce, since it enables the conclusion of economic contracts between parties that are at considerable distances from each other. In this regard, the main problem with an electronic document is its identification, signed by the author. This role in the international e-commerce is played by electronic digital signature. A sales agreement must be identified with the legal entity and the individual who created it.

In order to ensure the functioning of this element, the European Union directive No. 93 of 1999 was developed, the purpose of which is the legal recognition of the electronic signature. Similar laws are in force in Germany, Italy, India, some US states, and bills are in Denmark, France, England, Spain, Austria, etc. An analysis of the national and international legislative framework suggests the availability of a variety of approaches to regulating the use of electronic signatures. The basis for this discrepancy is the intended purpose of its use: either internally or internationally.

In many other countries, the legislation on electronic signatures is already in force or is in the process of being adopted. An important role in this is played by international acts designed to streamline and standardize the use of electronic digital signatures - this is primarily the 1996 UNCITRAL model law on E-commerce.

The World Intellectual Property Organization (WIPO) pays special attention to issues related to the implementation of the protection of trademarks, copyright and patents in the field of electronic commerce [23]. One of WIPO's major e-commerce trade tasks is to resolve disputes that arise from uncertain relationships between domain names and trademarks. WIPO has initiated internationally the process of developing recommendations for addressing intellectual property issues related to domain names of the Internet, including the dispute settlement issue. Recommendations developed as a result of WIPO's work on the organization of domain names of the Internet will be presented to Internet corporations by assigning names and numbers to the Internet (ICANN), an organization created to manage the system of domain names of the Internet.

The arbitration and mediation centre of WIPO has developed a conflict resolution system based on the use of the Internet, capable of providing neutral, quick and cheap consideration of disputes arising in the field of electronic commerce without the physical movement of persons or objects. Although this system is developed directly to resolve disputes over the names of domains, trademarks, and in general intellectual property conflicts, it has certain advantages in terms of quick and cheap settlement of any international commercial conflicts that arise in e-commerce.

The main task of the International Chamber of Commerce (ICC) is to develop the internal regulation of electronic commerce, and to this end, ICC has prepared a number of working tools designed for business use.

Firstly, the ICC has revised its guidelines for all types of marketing and advertising activities on the Internet, aimed at promoting the promotion of any type of goods or services on the market. Now, in accordance with these principles, rules of ethical behavior are set up that must be respected by all advertisers and marketing organizations in order to strengthen public confidence in trading activities in the Internet environment, advertisers are guaranteed freedom of expression, due to these principles, the need to implement state regulation of confidentiality is minimized. The key provisions of these principles require the disclosure of the identity of the advertiser, the full disclosure of all costs and responsibilities relating to e-commerce and marketing, and restrictions on the collection and use of personal data.

Secondly, the ICC has developed general methods for the implementation of international trade transactions, certified in digital form. They offer a list of definitions and types of the best commercial practices used to certify documents in electronic commerce trade.

ICC's Working Group on E-Commerce trade has developed the basic rules for e-commerce trade and settlements. The purpose of her work is to increase the efficiency of trade not only through the adaptation of rules to new technologies and media carriers, such as the Internet but also through the use of these new means to reconcile trade operations. These guidelines contain guidelines for buyers and sellers from around the world to negotiate, contract, and deal with issues related to financing, transportation, or insurance on the Net.

At the Second WTO Ministerial Conference (Geneva, May 1998), on the initiative of the United States was adopted a separate Declaration on Global E-Commerce trade, in which the General Council of the WTO was instructed to develop a program to study all aspects of trade related to the concept of e-commerce [29].

The legal framework for international e-commerce has been introduced by the UN Convention on the Use of Electronic Communications in International Contracts since 2005 [33]. At the same time, plurilateral agreements on information technologies and basic telecommunication services are applied (The Information Technology Agreement, The Basic Telecommunication Services Agreement).

Similarly, there is an agreement between the USA and 11 countries of the Pacific, North and South America - Japan, Australia, New Zealand, Singapore, Malaysia, Brunei, Vietnam, as well as Canada, Chile, Mexico (The Transpacific Partnership, TPP). As in the previous agreement, the Trans-Pacific is ambitious, since it has become the largest US free trade deal with a region that accounts for about half of the United States trade. It also refers to the size and level of trade liberalization of the parties by goods, services and agriculture, which are not covered by WTO agreements. Moreover, the level of flexibility of this agreement (as well as the agreements with the EU) makes it possible to speak of its effectiveness in terms of openness to expanding membership and the introduction of new provisions on trade and investment (so-called "living agreement").

The period of the formation and development of international e-commerce is about five decades of intense development, which, compared to the history of other sectors of the economy seems to be an insignificant amount of time. The birth of the first systems and methods of e-commerce are due to the emergence of automation technology sales of air tickets, banking operations, plastic cards and the construction of automated systems of enterprise resource management.

The beginning of the e-commerce era can be considered in 1960 when American Airlines and IBM began setting up a system for automating the reservation procedures for flights - SABRE (Semi-Automatic Business Research Environment - semi-automatic equipment for commercial research). This was the first experience of creating an e-commerce system. The SABRE system made air travel more accessible to ordinary citizens, helping them navigate in frequencies and flights that were constantly growing. At the expense of the automation of the process of calculating the tariffs when booking places reduced the cost of services. This system could implement integrated profitability management, allowing airlines to maximize profits through manipulations with prices, taking into account the availability of vacancies. In 1964 a day the system could reserve seats for 26 thousand passengers. Terminals American Airlines, connected to SABER on telephone lines, was more than fifty cities [26, p. 33].

And already in 1994, Jeff Bezos, who began his career as a programmer, founded Amazon. July 16, 1995, Amazon Online Store

opened its website. In the early stages Jeff Bezos by himself had to take bookshelves and pack books that were bought through his store, tables for the completion of orders served as a door lying on two boards. The turnover of the store for the first week of work amounted to 5 thousand dollars. A month later, at Amazon.com, books were bought not only by Americans but also by residents from 45 other countries, and by the end of 1995 sales reached $ 1 million. Active marketing policy (creation of personalization technologies, simplification of the purchasing process, etc.) allowed the company to take the leading position in this segment of the market, providing an annual growth of turnover by several orders. Already in 2004, the total sales of the world's largest online store Amazon amounted to 6.92 billion dollars [5, p. 276].

Three of Europe's leaders in terms of Internet commerce as of 01.01.2015 were Great Britain (€ 59.4 billion), Germany (€ 45.07 billion), and France (€ 38.66 billion). These three countries accounted for 71% of all online sales in Europe. In 2016, this tendency persisted in Britain, Germany and France, which accounted for more than 60% of the entire market in Europe [27].

In the US, the e-commerce market in 2015 reached a mark of 224.2 billion dollars, with growth in relation to the previous year amounted to 15%. In 2016, the market volume amounted to 262 billion dollars. According to the results of 2017, the growth is expected to reach 291 billion dollars, and by 2020 up to 370 billion dollars. [22]. Despite the fact that the growth rate of e-commerce trade is decreasing, its share in the total retail trade is increasing (from 8% in 2015 to 10% in 2020) – see Fig. 17.2.

While the vast majority of small and medium-sized enterprises in developing countries have not yet begun buying or selling online products, current trends increase their chances of gaining ever greater benefits from e-commerce. Firstly, the network coverage has substantially increased, largely as a result of the massive spread of mobile telephony and social networks, as well as expanding the use of the Internet through the introduction of international and national fiber optic networks. Secondly, new applications, platforms and services reduce barriers to entry. Thirdly, new payment solutions are expanding e-commerce trade opportunities for both businesses and consumers. Fourth, local e-commerce trade companies - in some cases supported by foreign investors - are emerging rapidly in developing countries where

they are ready to meet the needs and needs of local consumers. Fifthly, businesses and consumers are increasingly willing to participate in e-commerce trade, and, moreover, governments and legislators increasingly understand the importance of relevant laws and regulations to increase trust in the online environment [15, c. 172].

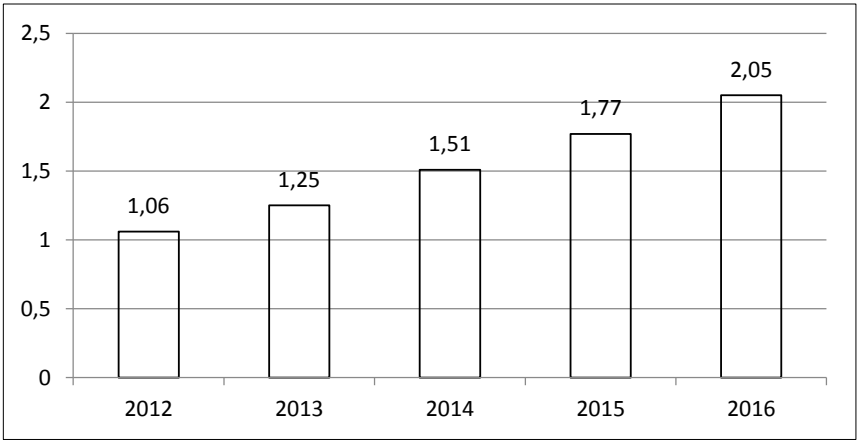

Fig. 17.2. Sales volumes of the world online stores, 2012-2016, (trillion dollars)

Source: compiled by the author on the basis of [25; 27; 28].

E-Commerce trade platforms with an active presence in all regions of the world, such as Amazon, eBay, Alibaba and OLX, open up new opportunities for many small businesses by facilitating access to international markets, as well as trading, arranging delivery operations and financial operations inside and between countries. However, trading firms in developing countries do not always have equal access to these services: for example, some cannot register as sellers on the Amazon website. In eBay, users can register for the sale of their products on this platform in 24 member states of the United Nations, including nine developing countries. Other eBay sites deal with purchases, but not sales [21].

However, new market participants are offering solutions that take into account the specifics of the local market in developing countries. The absence of global platforms creates opportunities for filling this space by local players (Fig. 17.3).

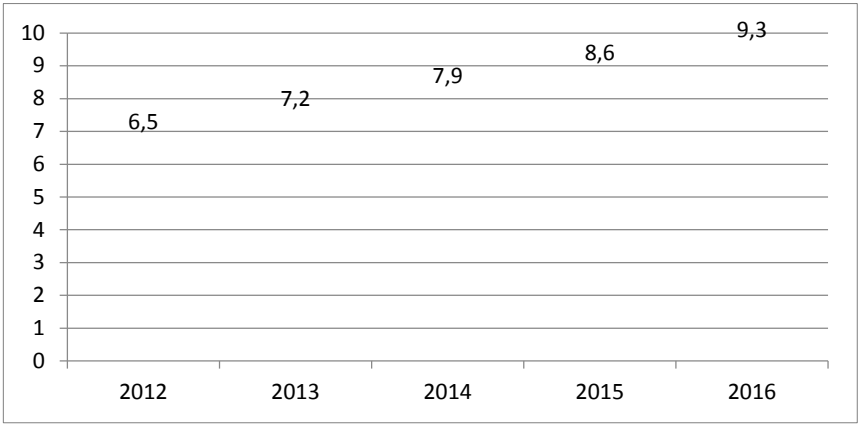

Fig. 17.3. The share of Internet commerce in the world retail trade, 2012-2016, %

Source: compiled by the author on the basis of [25; 27; 28].

Over the past few decades, many changes have been made in world trade, which must always be taken into account when managing the national policy on international e-commerce. Ukraine has become a member of the WTO and has concluded an FTA with the EU, but it also needs to take into account the processes that take place in the international e-commerce market:

1. First of all, it concerns the actual world production processes, changes which have significantly affected the technology of foreign trade.

2. Another important point is the active introduction of new instruments for regulating world trade both at the national level and in particular within the framework of the WTO. This is a response to shifting the focus from tariff regulation to the use of its non-tariff means.

3. The last aspect of the change concerns a series of international trade agreements of the new generation, taking full account of the first two factors of change.

However, the most important are the consequences that already exist and will continue in the interconnection of these processes.

The so-called vertical organization of production professed mainly by TNCs, led to the fragmentation of the process of development, production and distribution of the final product, not only in the region

but also in the global dimension. Usually, this is due to such well-known phenomena as outsourcing and offshoring.

The corresponding export-import operations, local turned the definition of the origin of the finished product from Made in X-country to Made in the World. The indicated deliveries of "components" both for goods and modern high-tech services have acquired the terms "Global Supply Chains" or "Global Value Chain" [19, p. 22].

It is obvious that Global Supply Chains is about the fragmentation of the international production and related stages. "Global Value Chain" is a valuable reflection of this process, which significantly affects the pricing of a final product or service. Both processes are characterized by extraordinary complexity when end products and services during their manufacturing and sales pass through such interconnected "production" stages, as conceptualization, design, marketing and distribution, belonging to different countries. First of all, it concerns a number of so-called flexible industries - electronics, automotive and electrical engineering.

This fact has naturally changed the approaches to understanding and measuring what is called comparative advantages in the international division of labour. Specialization is no longer based on the overall balance of comparative advantages of the countries producing final products. Instead, they came with the comparative advantages of "tasks" (combined display of products and services) that these countries perform in accordance with the specific stage of the global value chain.

Relying on innovations and modern technologies, goods and services are less related to classical boundaries, both physical and customs. That is, the stated process is not purely productive in nature and is not focused on search ways to reduce only the cost of production. It also actively involves saving costs for transport, settlement and telecommunication services. In fact, it refers to such a production process that covers the entire list of relationships between producers of goods and services and their consumers.

Recognizing the importance and need for fragmentation of production, some experts suggest further recognition, by securing its conclusion of an International Supply Chain Agreement. This conviction is based on the results of a joint study by the World Economic Forum and the World Bank, according to which the removal

of barriers to the value chain can raise the level of world GDP by 6 times more than eliminating the balance of import tariffs. At the same time, this conviction calls for active cooperation between governments and business communities in order to realize the objective links between production processes, relevant services and taking into account these links in the development of new free trade agreements.

The rapid development of information technology in our time contributed to the emergence of international information space Internet. With the development of Internet technologies, new markets, forming the corresponding segment of the world economy and taking their place in the Ukrainian economy markets, appear and develop accordingly. Society is increasingly moving to a qualitatively new stage of development, where information plays a paramount role. Obviously, in the near future due to the uneven implementation of information systems and technologies, there will be a completely new kind of social inequality - informational, and the direction of further development of states will determine the intellectual potential of the people.

The emergence and development of new emerging markets, generated by Internet technologies, attract the attention of international organizations, leading financiers and banking groups of the world, heads of state and business, primarily as a strategic component of the future economy. Especially it is a relevant research in the field of Internet economy for Ukraine in the conditions of transformation and integration into the world economy, in particular in the European. In order not to become an "informally poor" state and to further deepen the gap in the development and unevenness of capital accumulation that is relevant for Ukraine, there is an entry into the system of international e-commerce.

The medium for e-commerce may be not only the Internet but also any computer network. The subjects of e-commerce can be physical and legal persons, as well as government organizations. E-commerce opens new markets and new money - electronic cryptocurrencies, through which payments and settlements are made.

Internet commerce annually increases its performance twice all over the world. Growth rates in developing countries are higher than in developed countries. Therefore, Ukraine has all the prerequisites for the effective functioning of the e-commerce market. It can be argued that the Ukrainian e-commerce system is only emerging, but its

development takes place dynamically. So, for the period of 2014-2016, the annual growth rate of e-commerce on the Ukrainian market is 50-60%. The online trading market in Ukraine has significant potential and a rapid increase in the level of penetration of Internet technologies into trade, indicating the ease of use of e-commerce in business (Fig. 17.4).

The bottlenecks in the development of e-commerce in Ukraine are the problems of protecting intellectual property rights for goods (insufficient protection of software makers, films and music in our country), an uncertainty of buyers in the guarantee of delivery and quality of goods (possible problems with returning to stores located in other cities and countries) and distrust of people to electronic payment methods due to periodic events with the source of confidential data of payers. And if in China and the USA the capacity of the e-commerce market in 2016 amounted to about 300-400 billion dollars, then in Ukraine, a similar figure is just over 2 billion dollars. In addition, there are a sufficient number of segments of this target market, which are practically not occupied.

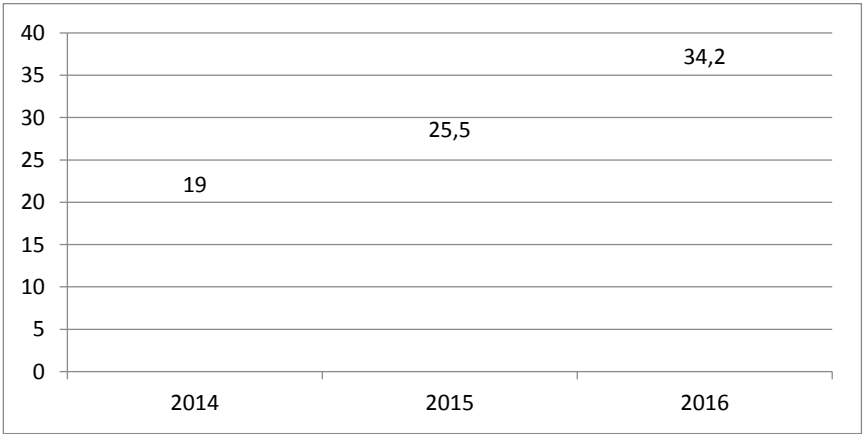

Fig. 17.4. Commodity turnover in Ukraine in the field of electronic trade for 2014-2016, UAH billion

Source: compiled by the author on the basis of [6; 7; 9].

At the present stage, electronic commerce trade is a powerful mechanism for stimulating the development of entrepreneurship and the expansion of sales of goods and services, including in the world

markets, in connection with which in Ukraine the need for approving the relevant laws, regulations, development of state programs, which is legally regulate this area and allow Ukrainian companies to become full members of the electronic market.

In Ukraine, work on the creation of legal foundations for e-commerce began in 1998 with the adoption of the Law of Ukraine "On the National Program of Informatization" [13]. At the same time, the Concept of the National Program of Informatization was approved and the Law of Ukraine "On Approval of the Tasks of the National Program of Informatization for 1998-2000" was adopted. The next step was the Decree of the President of Ukraine "On Measures for the Development of the National Component of the Global Internet Information Network and Providing Broad Access to the Network in Ukraine" of 31.07.2000 [12].

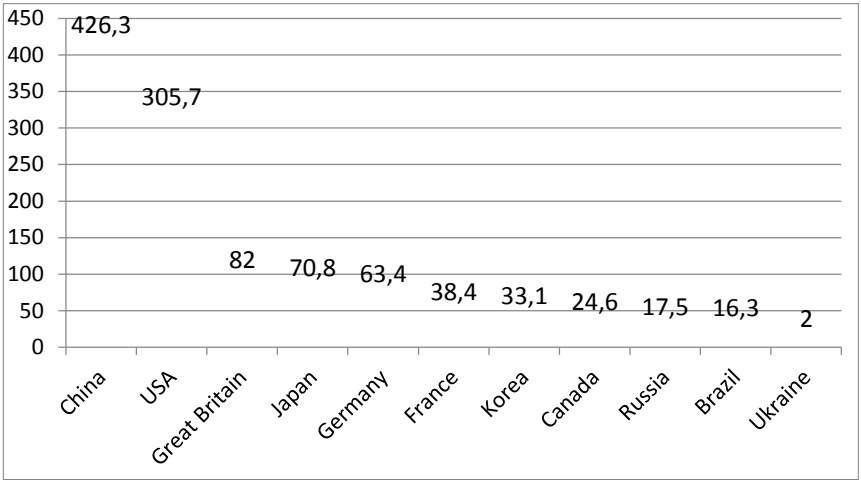

Fig. 17.5. Capacity of e-commerce trade markets in Ukraine and in the world, 2016, billion dollars

Source: compiled by the author on the basis of [6; 7; 9].

Later, the laws of Ukraine "On electronic digital signature" [10], "On electronic documents and electronic document circulation" were also adopted [11]. The law defines the notion of an electronic document and electronic document management, consolidates world trends in recognizing the legal validity of an electronic document, points to

the rights and responsibilities of the subjects of electronic document circulation, their responsibility, etc.

In addition, Ukraine has the Law of Ukraine "On the Basic Principles of the Information Society Development in Ukraine for 2007-2015" of January 9, 2007 [14], the Law of Ukraine "On Payment Systems and Transfer of Funds in Ukraine" dated April 5, 2001, rules for the organization of the protection of electronic bank documents using the means of information protection of the National Bank of Ukraine, approved by the Resolution of the Board of the National Bank of Ukraine of 02.04.2007, the Regulation on electronic money in Ukraine, approved by the Resolution of the Board of the National Bank of Ukraine of 04.11.2010 p. and other normative legal acts, which together form the legal basis for the regulation of relations in the field of e-commerce trade.

Unlike the laws of many countries, such as the United States and EU member states, Ukrainian legislation contains a very small number of rules designed to regulate e-commerce directly. Although this approach has some positive effects (lower level of restrictions and a higher level of freedom of entrepreneurship, technologically neutral mode of regulation, etc.), the absence of special norms is all the more important.

Another significant development taking place in the international e-commerce market is the introduction of PayPal's international payment system in Ukraine. To this end, the National Bank, together with the Ministry of Economic Development and Trade, agreed to join efforts and create appropriate conditions for the start of work in Ukraine of the system of international Internet payments PayPal (an electronic payment system that allows customers to pay bills and purchases, send and receive money transfers. As of 2015 PayPal operates in 190 countries, has more than 173 million registered users and operates with 26 national currencies).

It is evident that there remains a complex of unresolved relationships related to the use of electronic information in areas such as customs clearance and taxation, electronic payment systems, intellectual property protection, security, privacy, etc. The general rules regulated by the conduct of business (commercial) activities (the Civil and Commercial Codes of Ukraine, the Law of Ukraine "On Protection of Consumer Rights", etc.) are increasingly incapable of adequately

regulating social relations that arise in the conduct of e-commerce, impeding its development.

Adapting Ukraine's legislation to key EU standards in the digital sphere will help to boost the economy and enable Ukraine to integrate into the Single Digital Market in the future because with its highly skilled human capital Ukraine occupies a leading position in the field of information and communication technologies in Central and Eastern Europe. Moreover, Ukraine can become not only European Software Hub but also a country exporting its own digital products and services.

The spread of the benefits of the Single Digital Market beyond the EU can include a variety of areas: e-commerce, electronic customs, e-health, paperless trade, as well as electronic communications rules and infrastructure (including frequency coordination and broadband).

It is also possible to collaborate on issues of network and information security, cyber security, e-identification and trust services, digital skills and innovation, e-government and open data - and that is just some of the opportunities. These topics are now the subject of discussions between government officials and academics, and the possibility of including new areas such as data protection, international roaming and the expansion of digital infrastructure (both within Ukraine and between Ukraine and the EU) can be considered.

Taking into account the above, it is quite understandable that the Ukrainian lawmaking activity should take into account the norms of the international regulations on e-commerce, the main place of which is the UNCITRAL Model Laws and the EU Directive, since their non-recognition may exclude the possibility for domestic sub Business entities to participate in international trade [1, p. 96].

Summarizing the above, we give an indicative list of priority measures, which in the future are designed to provide the necessary legal regulation of e-commerce, among them:

1. An important and necessary is the adoption of a special legal act (Law of Ukraine "On e-commerce"), which is devoted entirely to the regulation of e-commerce, which will generalize, systematize and identify the main elements of e-commerce, in particular: the composition of the participants in the e-commerce relationship; the role and significance of economic contracts concluded in electronic form; the procedure for the conclusion of agreements by electronic means; terms of the contract, concluded through telecommunication

networks; the procedure for using electronic documents, their originals; confirmation of receipt of electronic documents; responsibility of e-commerce participants, etc.

2. Bringing the legislation of Ukraine in the field of e-commerce in line with EU legislation should pursue the goal of making domestic entrepreneurs a full-fledged participant in the EU electronic market and promoting the growth of sales of goods and services of Ukrainian enterprises in the EU markets. This applies, for example, to rules that will help to recognize the validity and legal validity of electronic signatures and electronic certificates generated in Ukraine. At the same time, the convergence with the norms of the EU legislation, which do not affect the development of free trade between Ukraine and the EU and which makes sense only in the case of EU membership (for example, the rules of the Directive on e-commerce for administrative cooperation), should be avoided.

3. When drafting legislation on some issues of e-commerce that is not fully or successfully addressed by EU law (for example, on-demand content removal procedures), the United States or other countries, in particular some of the individual EU member states, need to take better decisions (for example, the laws of the United States of America have been taken from the law of Finland regarding the elimination of copyrighted materials upon request) [24].

4. When developing and improving the legislation of Ukraine in this area it is necessary to rely on the principle of technological neutrality, special attention in this aspect deserves the provisions of the UNCITRAL Model Law "On E-Commerce", which does not directly contain a list of principles on which e-commerce is based, but an analysis the content of which gives grounds to highlight such principles as the free exercise of electronic; as non-discrimination of transactions carried out through telecommunication networks; as openness and technological neutrality; Guaranteeing judicial protection of the rights of persons who carry out e-commerce. Therefore, it is advisable to borrow these principles of e-commerce and consolidate them in a special comprehensive law of Ukraine "On e-commerce", which will help to establish the necessary and sufficient legal regulation of e-commerce in Ukraine.

5. The development of e-commerce will not have real prospects if its participants will not be able to protect their rights and legitimate

interests, in particular in the court. In this context, among other things, at the legislative level, rules for filing court evidence in electronic form, with a digital electronic signature, etc., should be defined.

Under the current Association Agreement with the European Union, it is necessary to conduct simultaneously reforms in line with EU standards in the regulation of e-commerce and the promotion of e-commerce cooperation in Europe. The question of improving the tools, methods and principles for regulating e-commerce should go exclusively at the international level, as in the EU, NAFTA countries and at the UN level. The fight against illegal e-commerce markets in Ukraine, where the sale of uncertified goods and services is carried out, should go only ways to promote the development of national Internet commerce, excluding the possibility of further legal inhibition of those involved in electronic commerce.

Considering that in the long-term the role of cross-border provision of services through the Internet will inevitably increase, obviously, very carefully and with the miscalculation of all consequences, take into account all risks in this way of supplying services in those sectors where it will play an increasing role (financial, educational, medical, tourist and a number of other professional services).

In order to give business entities the freedom to choose their jurisdiction and, accordingly, the "tax climate", the legislative bodies of Ukraine should change the tax conditions for attracting foreign investments and registering private companies in our country. In the conditions of effective implementation of the Association Agreement with the EU, the need to take into account in the legislation of Ukraine the provisions of the EU Directives on the legal regulation of relations on the Internet.

A significant amount of work is to be done by legislators, government and private entities associated with this promising industry, in order to give a powerful impetus to the development of e-commerce, and to guide the process of its further development in the necessary direction, taking into account international norms and requirements. The main factor hampering the development of e-commerce trade in Ukraine is the lack of actions that would promote the development of small and medium-sized businesses and its admission to the use of e-commerce trade platforms.

It should also be emphasized that those countries that have succeeded in creating a supportive competitive environment and an adequate legislative framework for its development will be able to benefit from e-commerce. To this end, the concept of the development of electronic commerce in Ukraine in the context of globalization should be defined and developed at the highest level with the aim of introducing effective tools in the area of counteracting information challenges and threats.

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CHAPTER 18

INNOVATIONS IN THE LOGISTICS OF INTERNATIONAL TRADE

Ludmyla G. Harsun

The expansion of companies on international markets provides the receiving for them the scale effect, but foreign trade operations are more expensive than analogical activity within the separate national market. This is why their participants are searching the ways of charges optimization considerably more actively. Thus they can achieve not only raising the level of profits, but also getting additional advantages on world markets of commodities and services with tough competition. As most researchers and practices consider that the biggest cost components decline potential in international trade concerns logistics decisions, directed at processes optimization and charges minimization.

The international competitiveness of modern companies is substantially determined by the innovation level of their activity. Today innovation is the most important driver of firm competitiveness in all national economies.

Despite the innovations introduction in the traditional spheres of economic activity, for example in production, especially actual today are innovations in logistics of international trade. The question is about the necessity of making and implementation of innovative decisions for management system of international trade commodity flows. Such decisions must be directed at optimization of physical commodity sales during planning and realization of export-import operations.

Innovations in logistics of international trade may be presented as any technical, technological, organizational, informative, economic and commercially legal facilities and measures which provide effective commodity sales on international markets. In general logistics innovation can be considered as any type of associated service from the most basic one to a more complex and challenging one as long as it is viewed as an innovative and important tool to a particular audience [1].

Logistics innovations should be considered from the perspective of their degree of novelty, the level of standardization and the positive effect they bring. It is possible to consider as innovative only those

logistics decisions in international trade management which can provide the receiving additional positive effect. So, Arthur D. Little in his work "Innovation Excellence in Logistics" argues that companies with an effective and efficient innovation management system generally have lower logistics costs or higher EBIT. According to his conclusions optimized innovation management system can boost company success – as measured by of EBIT of margin – by an average of 3 to 8%-points. In particular for shippers such effect can be fixed at the level of 4.4%, and large logistics service providers believe they can even realize an average increase of 8.5%-points in their EBIT margins. The potential for reducing logistics costs as a result of the implementation of logistics innovations is between 7% and 14% for all shippers and logistics service providers [2].

Realizing such opportunities of logistics innovations logistics providers invest a lot of their resources in the latest logistics technologies. So, in 2017 83% of large companies executives continue to invest in the transparency of their supply chains. Significant investments are also aimed at robotization and automation of production (58%), implementation of the sensory-driven technologies and the Internet of things (43%), self-propelled or controlled equipment that operates without the participation of a human driver (14%), augmented and virtual reality (8%) [3].

Positively innovative approaches in logistics of international trade influence on performance related indicators such as turnover, delivery reliability and delivery time. Logistics innovation is expected to develop and arise from processes directed at collecting extensive insights about various logistics values of customers using communication with clients, with the interpretation of those insights through information sharing method and distribution and across the company.

However, the introduction of logistics innovations carries a number of threats. First of all innovative logistics technologies are quite expensive, although they provide savings in the long-term perspective. Also there are some risks in the labor market connected with the automation of production processes and the staff dismissal. Thus, warehouse and transport logistics were second sector by sensitivity to such risks. According to analysts of the independent consulting company PricewaterhouseCoopers, in the next 15 years 56.4% of workers in these industries may lose their jobs [4].

In general, the logistics of international trade is sensitive to innovations of 5 types: product, process, technological, infrastructural and systemic.

Taking into account that the geography of export-import deliveries is becoming more differentiated, focused on the closeness to the customer, logistics innovations in international trade mainly relate to the transportation methods and search of new transport technologies.

Today many technical and technological innovations on transport are designed to reduce the level of transport charges on delivery of international trade goods. Often such effects are achieved as a result of the optimization of the control system of rolling stock. For example, modern transport vehicles are mostly equipped with various devices, which give information about the charges of fuel (general and per one trip), speed and economy of movement, and others like that. It is possible to optimize the route of transportation, avoid idle raids, reduce running expenses and, on the whole, increase the quality of delivery using such information.

The emergence of the modern systems for tracking cargo location was a peculiar revolution in transport. Especially meaningful are such innovative decisions in the field of international trade because of considerable distance of deliveries in international connection and the difficulty of controlling them. So, automated global satellite system Global Positioning System (GPS) allows sufficiently clear to set the location of transport vehicle and control the fulfillment of the exporter's obligations according to the international agreement of purchase-sale consequently. Today Satellite navigation systems have become increasingly affordable and available and are used to determine quite exact location of people (for example warehouse staff, drivers), goods, containers, etc.

As an innovation in logistics which is already widely used and in practice of international trade it is in most cases obligatory can be considered combined transportations, that is a combination of different types of transport in one shipment. Such transportation technology due to enlargement of freight places and absence of overloads enables getting a positive effect of saving on loading and unloading operations, provides safety of loads, implies the simplified systems of documentary support (drawing up cross-cutting documents) and extra charging tariffs (use of the unified tariffs).

Innovative technologies of the combined transportations of export loads predetermine the development of technical innovations in rolling stock and loading-unloading technique. For example, trailers are used in combination of motor and railway transport, in a river-sea connection – lighter carriers (barges). The last " work only on the following directions of international trade: Danube is India, countries of South-east Asia, Basel, – Rotterdam is New Orlean, New Orlean is Ports of countries of area of the Caribbean pool" today [5].

The containerization of international traffics of goods significantly contributed to the development of combined transport and became principal reason of innovative changes in vehicles in accordance with the sizes of containers. The question is about appearance of container vessels, railway container platforms, kontreylers, special overloading facilities and others. Application of container transportation technologies allows to get some positive effects in logistics of international trade and to improve logistics services quality, such as:

- the loading-unloading operations productivity increasing;
- the use of transport vehicles optimization, the outages amount decline and, as a result, general time of delivery decrease;
- the level of loads safety rising and charges on their insurance reduction consequently;
- the charges on packing, holding stocks, transportation and loading-unloading operations reduction.

The development of most logistics innovations such as appearance and using in international transportations of vehicles with increased load capacity, containers, technical means of mechanization and automation in trans-shipment points, receiving and warehouse complexes, often predefined by a tendency to enlargement of freight units in order to minimize expenses of commodity sales in international connection.

In addition to savings in costs the sending lots increase requires consolidation of loads of different exporters. That is why the development and introduction of innovations in communication and informative systems are of great importance today.

The most modern innovative tendency in transport is the development of unmanned transport vehicles. For example using ground drones also bring excellent savings. Their use in the truck sector requires 40% less costs than hiring drivers.

The necessity of the costs on realization of international trade agreements cutting, from one side, and providing of operative commodities availability for foreign customers, from other side, requires careful planning and control of export and import stocks of goods, warehousing operations optimization. Accordingly another functional sphere in logistics of international trade which implies the intensification of innovative processes is inventory management and warehousing control systems.

There are two equivalent but different in content approaches to inventory management in international trade today. At first, maximum synchronization of receipt and shipping operations with commodities means the orientation on reduction of stocks on all links of supply chains in accordance with the just-in-time concept. The confirmation of this tendency can be a widespread innovative technology of cross docking, which substantially diminishes a requirement in the use of warehouse areas by storage and shipping of products directly from one vehicle to another. By the way warehouse complexes are used in this case only for parking of rolling stock and sometimes for re-completing and re-packing loads. In this way duration and cost of warehouse operations can be decreased.

At the same time, warehousing of goods remains an intermediate link in logistics service of international trade, besides a tendency of reducing the number of warehouses, which one export stream passes through, appearance and development of large warehouses and distribution complexes (logistics centers). As the scales of international trade are increasing, export loads delivery is more frequent realized according to the scheme: producer – logistics center – customer. So, the creation of regional logistics centers has become widespread in the places of international trade flows concentration, mostly in ports. Among the largest such transport and logistics centers should be highlighted Japanese ports of Tokyo, Iokogama, Kobe; Hong Kong and Shankhay (PEOPLES REPUBLIC OF CHINA), Gaosyun and Czilun (Taiwan), Singapore, European ports, - Rotterdam, Amsterdam, Filikstou, London, Sausgempton, Bremerkhafen, Hamburg, Genoa, Al'khesiras, Geterborg, Zeebryuge, Gavr, Barcelona, and dr.; ports of the Pacific and Atlantic coast of the USA and Canada; separate ports of countries which develop, such as Dzhidda, Alexandria, Durban, Rio-de- Zhaneyro, Salvador and others [5].

Warehouse and distribution complexes, which serve the streams of international trade, are distinguished by the scales of carrying capacity and intensity of streams. The experience of some developed countries has shown the work of logistics centers allows to reduce transport charges on 7-20%, charges on loading-unloading operations and storage of material resources and finished products on 15-30%, general logistics charges on 12-35% [6]. But such effectiveness of warehousing operations with of international trade loads implies implementation of whole complex of logistics innovations, first of all regarding the technical, technological and informational support.

Depending on character and intensity of innovative processes the warehouse systems develop in the direction of mechanization, automation and computerization. Among mechanical innovative facilities of goods warehousing such lifting-transport warehouse equipment as forklifts, mobile and hand trucks, towing lines, tractors, conveyors, stackers, carousel mechanisms and other technique are widely presented. Automation of warehouse operations with export loads implies application of automatic control devices for transport, warehouse and storage processes, such as rack, freight distribution systems, measuring and packaging devices, loading-unloading and warehouse machines, and others. An example of innovative facilities in warehouse logistics of international trade are the automated warehouse shelving KARDEX produced by the business concern KARDEX System AG (Switzerland), automated sorting lines, trolleys with automatic control of movement. Most of these innovative technical and technological facilities imply the high level of computerization, robotizing of warehouse operations.

Considerable attention in international trade management is paid to innovative development of the informative systems today. So, widespread in the world practice has become different modifications of WMS software (Warehouse Management System), which allows to manage the warehouse goods traffics operatively, to set the location of concrete commodity and carry out a number of operations with it. For example, adapted by Russian company LOGISTIX specially to the necessities and features of cargo handling technology of the logistic operator and official distributor of Procter & Gamble, Nestle and Upeco "A-P of Trade" company LEAD WMS allowed to carry out a small-party completing of goods with the previous calculation of container,

to take into account the remaining expiration dates, conduct the automatic calculation of optimum amount of stocks for preventive replenishment, to use radio terminals with arm blocks and scanners in warehouses (scanner-ring) to ensure the high efficiency of the employees work and so on.

Another innovative tendency in warehouse logistics of international trade is networks of bond warehouses development, the basic feature of which is providing of insignificant production operations with commodities and their pre-sale service. The necessity of such warehouses is caused by requirement as to better meet the needs of multinational consumers.

Because of implementation complexity volumes and costs of international trade operations, positive changes in their logistics service depend heavily on speed, accuracy and efficiency of processing a large amount of information and on communication possibilities of exporters and importers. Among the barriers of global logistics development the informative ones are on the 3th place (27%) after legislative (32%) and custom (41%) [7]. Taking into account this fact, there is an obvious need for innovative development of the informative and communication logistics systems of international commodity movement. Innovations in the informative systems of logistic are called to facilitate and accelerate the receipt of information about cargo, sender, consignee, carrier and other participants of supply chain, delivery options, regulatory restrictions of international trade and others.

As one of the most widespread innovations in goods flows management systems first of all have to be marked technologies of bar code technology and product codes e-reader. Universal commodity codes (UPS – Universal Product Code) are mostly used in international practice. Nowadays innovations in this sphere have been developed and UPS are read by drones not by people what allows achieve significant savings in time and labor costs.

A considerable innovative breakthrough is marked in the field of organization of information flows related to international commodity turnover. Such innovative technologies facilitate and accelerate document circulation, serve as an communication tool between exporters and importers, transport and expeditionary companies, and government agencies too. Among them first of all must be marked the system of transmission of standard texts of generally accepted

documents (EDI – electronic data interchange). Modern modification of EDI is the Internet EDI and the system of international standard reports (EDIFACT) ratified by the European economic commission of UNO. Another similar informative logistics systems, application of which is more territorially limited or oriented on the concrete participants of international logistics supply chains, are for example “Hermes” (unites computer networks of Western Europe countries) and “Decimel”, which substantially complements the last with the possibility of the electronic transport and commodity documents exchange.

On the whole, information and communication technologies in logistics, trade facilitation and supply chain security are categorized according to three main purposes: cargo operation, customs transit monitoring and supply chain security goals. But modern information technology (IT) systems mainly oriented towards rolling stock management and invoicing. The evidence of the introduction of innovative approach in the international commodity flows management is that fact, that all customs administrations are now operating with automated clearance systems, including for transit operations, and port community structures connecting all players in ports are also rapidly spreading, land carriers, both road and rail.

Security for international trade operations is the most significant area in which IT are progressing very rapidly. Visual control devices such as video cameras and cargo or vehicle-scanning devices are now present in all major ports and freight terminals.

Today exporters and importers in the world have already used different computer programs as C-TPAT, PIP and AEO, that allow to manage supply chains more effectively, “maintaining updated regulatory trade data, screening for denied parties, restricted products and embargoed countries, determining product eligibility for free trade zones, maintaining product classification databases” [8]. However, international commodities flows increase, permanent changes of international trade regulator terms, strengthening of integration processes between countries and the constant drive to “do more with less” require from shippers and consignees to use the innovative specialized facilities of global trade management (GTM) software. In particular, two major trade agreements are expected to make an impact on global trade in 2016 and 2017 the Trans-Pacific

Partnership (TPP) and the Trans-Atlantic Trade and Investment Partnership and to drive using GTM tools.

Modern innovative possibilities in logistics of international trade allow the logistics providers to manage their assets and vehicle traffic more effectively. However, much better results of their logistics activity they can get introducing innovative intelligent SmartHub Logistics (SHL) platforms, that integrate information from various different logistics functions within the yard and combines that data with external insights like local weather patterns or traffic congestion information. Essentially, SHL platforms draw on the momentous leaps in three fields of technology:

- mobility - geofencing, geolocation, telematics and mobile apps.
- cloud computing - hosted information services, instantly made available to users wherever they may be.
- Big Data - advanced analytics software which transforms data into actionable insights.

This provides operations managers with real-time information to help them allocate resources and create schedules in the most optimal way. A shipping port, for example, could consolidate real-time information from truck drivers, hauliers, parking space operators, port road management and vessel tracking systems. This data could be used to schedule and stagger the flow of trucks entering the port, off-loading or on-loading containers, and exiting the port.

Among the most significant modern trends in the innovative development of logistics besides geolocation, robotization and internet commerce, which also affect the international trade operations are:

- fast and affordable Internet everywhere - 3G, 4G, 5G;
- cloud technologies;
- BigData + ML (Machine Learning) + AI (Artificial Intelligence);
- recognition of images and voice – applications that online recognize employees, customers, cargo and its status, etc.;
- Internet of Things – the concept of a network of physical objects ("things") equipped with built-in technologies to interact with each other or with the external environment. These can be pallets, refrigerators, tires are equipped with such technologies;
- 3D printers, which can change location of production facilities and supply chain at the whole;

- social networks. There will be specialized "logistics" social networks which will allow to search and establish contacts between suppliers and carriers;

Blockchain – the technology behind digital asset and payment system [9]. This technology is already being used by such companies as Walmart, IBM, Marine Transport International (MTI), ports of Rotterdam and Antwerp and allows them to determine the origin of the goods, to automate and to optimize Container Streams, to improve interaction and exchange of information between supply chain participants;

- virtual and augmented reality, an example of which is the project GoogleGlass.

Summing up, it is obvious that the development and implementation of innovations in international trade activity is an objective reality. It allows to reduce charges of such operations, to improve the interaction of their participants, to accelerate the information and documents exchange, to provide safety and efficiency during all supply chain.

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CHAPTER 19

STRATEGIC PARAMETERS OF THE ECONOMIC DEVELOPMENT IN WORLD COUNTRIES IN GLOBALIZATION CONDITIONS

Oleksandr S. Rumyantsev

The uneven development of the countries of the world community makes it possible to distinguish among them three types according to the parameters of the achieved level and the results of the implementation of national economic strategic programs. The first type includes the economically developed countries, the second - the countries that profess the concept of sustainable development of their economy, to the third - the country, oriented towards the intensive use of innovative means and resources for the accelerated economic development of the national economy. On the eve of globalization, there is no doubt that the tendency towards convergence and equalization of levels of economic development of the countries of the world is becoming increasingly important. However, the essential features of the development of these types of countries remain dominant. Thus, developed or developed countries have consolidated their dominant position in the international economy. These are countries with a long history of market economy development, high (less than average) per capita income, stable financial markets, a wide, and varied economic structure, including the service sector, significant export and import opportunities, and so on. They are characterized by a high level of development of productive forces, information technologies, an intensive type of economic recovery, mature business and competition, high standards of living and well-being. Most of them entered the post-industrial stage of social development.

For our research, we have identified 5 economically developed countries, based on World Bank data [1]. The ranking of these countries for such an appropriate parameter as GDP in 2015 is as follows (table 19.1).

Traditionally, the G-7 countries include Great Britain, Italy, Canada, Germany, the USA, France, Japan - as well as small economically developed countries of Western Europe such as Austria, Belgium,

Denmark, Luxembourg, Iceland, the Netherlands, Norway etc. In general, these countries have much in common in the genetic and functional aspects of their development.

Table 19.1

Country ratings for GDP (by PPP) for 2015

№	Country	GDP (by PPP) for 2015 (billions of dollars)
1	China	19814,37
2	USA	18036,65
3	India	7998,28
4	Japan	4738,29
5	Germany	3857,07
6	Russia	3579,83
7	Brazil	3198,90
8	Indonesia	2848,03
9	UK	2700,55
10	France	2647,71

Source: [4].

First, in the socio-economic terms, the development of the economies of these countries is based on the capitalist mode of production, and, despite the socialization of property, its private form was and remains the source.

Secondly, developed countries are characterized by a high level of economic development. The realization of the decisive goal of production under conditions of competition - profit making - prompts the introduction of new technology and increased productivity, which in turn leads to cheaper products, expansion of markets, and stimulates the growth of production volumes and the economy as a whole. Comparison of labour productivity in industrialized countries and in countries with economies in transition and in developing countries indicates a huge gap between the last two groups of countries.

Thirdly, the socio-economic maturity of industrialized countries reflects the dramatic changes in the social structure of society in comparison with other groups of countries, namely, the growth in the size and role of the middle class, the improvement of the quality of human capital, and the share of people engaged in intellectual work, etc.

Based on the rating for GDP and considerations for involving countries from different parts of the world, we selected the following

five national economies, namely, countries such as the United States of America (2nd place in absolute terms and 10 in terms of per capita), Japan (4th and 28th respectively), France (10th and 24th respectively), Great Britain (9th and 27th respectively), Germany (5th and 18th respectively).

The next category is the countries that use the concept of sustainable development of their economy. Sustainable development is a process of economic and social change, in which the exploitation of natural resources, the direction of investment, the orientation of scientific and technological development, the development of the individual and institutional changes are coordinated with each other and strengthen the present and future potential for meeting human needs and aspirations. In many respects, it is about ensuring the quality of life of people.

The notions of "developed countries" and "countries based on the concept of sustainable development" are not identical. Their main difference lies in the ways of achieving economic development and progress. Developed countries and developing countries do not always care about environmental safety and the effects of applying new technologies to the environment. Instead, countries that have adopted the concept of sustainable development and are moving towards the implementation of all its key components, seek a balance between production and environmental damage, apply environmentally sound technologies and innovations.

It is clear that because of this policy, the "sustainable" countries are not able to overcome developed, but it is worth noting that recently, in the ranking of countries for GDP per capita [1] more and more representatives of the ecological direction of development. These countries, in particular, should include the Scandinavian countries and some European countries, as well as Canada, Australia, New Zealand, etc.

For our research, we chose five countries, based on the Index of sustainable development. This is an indicator (derived from primary data that can not normally be used to interpret changes); which allows you to judge the state or change of an economic, social or environmental variable. The main purpose of the index is to assess the situation or event, to forecast the development of the situation and develop its solution. Unfortunately, to date, there are still no substantiated

quantitative criteria that allow measuring the degree of sustainability of the development of states, individual regions and territories.

The Index of sustainable development is calculated by the formula:

$$I_{sd} = C_{ql} + C_{sl} \quad (19.1)$$

де C_{ql} – quality of life,

C_{sl} – security of life [3].

It is clear that each of these components, in turn, is divided into several more components. Thus, the indicator of the quality of life by one third considers economic, one third - environmental factors, and one third - social factors. The first index should include the Global Competitiveness Index (general requirements, efficiency improvement, environmental component) and the Index of Economic Freedom (in business, trade, financial and monetary sectors, etc.); to the second - the Environmental Hygiene Index (originally sounds like Environmental Health) and the Sustainability of Ecosystems; to the third - Indices of human development and quality of life [3].

The overall ranking of the country's Sustainable Development Index was as follows:

Table 19.2

Countries of the world according to the Sustainability Index 2015

Place in rating	Country	Sustainable Development Index Isd	Quality of life, Cql	Safety of life, Csl
1	Switzerland	2,92	1,48	1,44
2	Sweden	2,92	1,38	1,54
3	Iceland	2,91	1,3	1,61
4	Norway	2,90	1,39	1,51
5	Australia	2,89	1,29	1,60
6	Finland	2,89	1,33	1,56
7	New Zealand	2,88	1,4	1,48
8	Luxembourg	2,85	1,31	1,54
9	Canada	2,83	1,29	1,54
10	Denmark	2,82	1,34	1,48

Source: [1].

Based on this rating, as well as balancing statistics from countries from different corners of the world, we chose five economies of such states as Switzerland, Sweden, Norway, Canada and Denmark.

When analyzing the first indicator - GDP per capita - we immediately find confirmation that the "sustainable" countries, using advanced environmental technologies, today reach higher rates of development and welfare of the population. This can be argued by comparing the indicator.

As can be seen from the comparative analysis, the GDP per capita of "sustainable" countries is basically above the same indicator of developed countries. This suggests the effectiveness of the implementation of these innovations and technologies in the economy, which besides environmental, also has a positive economic effect.

Table 19.3

Comparative analysis of GDP per capita of developed and "sustainable" countries by 2015

№	Country	GDP (per PPP) per capita for 2015 (USD)
Economically developed countries		
1	USA	56115,72
2	Japan	37321,60
3	France	39631,35
4	UK	41458,70
5	Germany	47376,53
Countries implementing the concept of sustainable development		
6	Sweden	46703,65
7	Switzerland	61086,33
8	Norway	61196,69
9	Canada	44310,12
10	Denmark	46623,71

Source: elaborated by the author based on [1].

The third category is the countries that apply methods and tools for the accelerated development of their own economy. Such states have a rate that exceeds developed countries by 1.5-2 times. However, there is a claim that under such conditions, countries do not care about the environment and the negative impact on the environment. In order to check this thesis, we apply a correlation-regression analysis according to the given scheme.

It is believed that the impetus for proliferation and active use in the countries of the world, the model of accelerated development was received in Japan after the Second World War. This model supports industries with the highest growth potential. Countries that use the accelerated development strategy set a large number of targeted tax incentives, which are designed to increase the effectiveness of the policy of state influence on the economy. In addition, the main burden of the tax burden is transferred through the progressive scale of corporate income tax on individuals [5].

The list of fast-moving economies now includes a number of countries, which can also be found in the countries' GDP ranking, mentioned in the previous paragraphs. For a detailed analysis, we distinguished the following 5 states: the PRC, South Korea, Ireland, Indonesia and Malaysia.

These countries are often mentioned in modern scientific literature when it comes to accelerated development. That is why their consideration in the context of the impact of accelerated development tools on environmental processes is most urgent.

Having defined the countries, we can finally go to the selection of data for analysis. The overwhelming majority of necessary information is the database of the World Bank [1].

Investigating the correlation-regressive influence of countries on the environment is expedient in several indicators; the first of them is the gross domestic product. In the time series, we chose a gap of 25 years - from 1990 to 2014. They are characterized by the statistics of 15 countries in two basic parameters:

- Gross domestic product (in US comparative dollars);
- Gross domestic product per capita (in US dollars).

When calculating the gross domestic product is converted into international dollars on the basis of purchasing power parity. The international dollar has the same purchasing power in relation to GDP as the US dollar in the United States. GDP in the buyer's prices is the sum of the value added of all resident producers in the economy plus any product tax, less any subsidies not included in the value of gross value added production. It is calculated without taking into account the depreciation of the assets produced or the depletion and degradation of natural resources.

For a more reliable analysis, these and subsequent indicators were also translated into relative values - growth rates. This is an indicator of a number of dynamics, which shows how many% has changed the current level of the indicator compared to the previous or base period:

$$T_{пр} = \frac{y_i - y_{i-1}}{y_{i-1}} \quad (19.2)$$

$T_{пр}$ – the growth rate of the indicator being analyzed,

y_i – the index of the analyzed year,

y_{i-1}– the indicator of the previous year.

Accordingly, the third expression of GDP in the study was the growth of GDP. For convenience, it was converted into an interest in accordance with the percentage increase formula:

$$T_{пр} = \frac{y_i - y_{i-1}}{y_{i-1}} * 100\% \quad (19.3)$$

The GDP per capita of the studied groups of countries is shown in Fig. 19.1, 19.2 and 19.3.

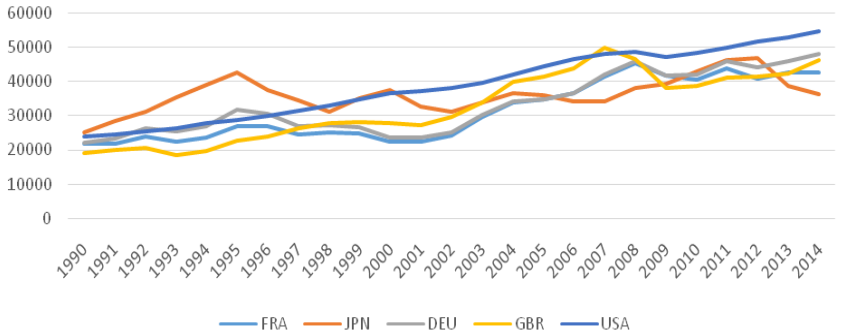

Fig. 19.1. GDP per capita in US dollars in developed countries during the years 1990-2014

Source: elaborated by the author based on [1].

As can be seen from the graphs, the GDP per capita in the developed countries is relatively stable. Curves have a smooth slope, indicating a continuous, even growth of this indicator. All five selected countries

show almost identical results, which was in 2014 about $ 45,000 (twice as much as at the beginning of the research period).

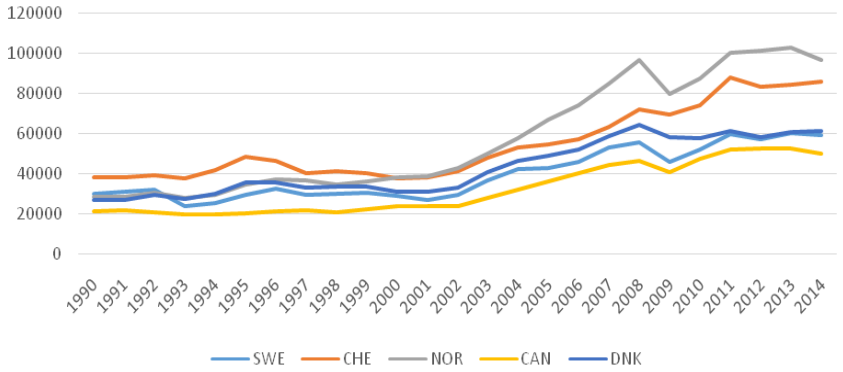

Fig. 19.2. GDP per capita in US dollars of sustainable countries during 1990-2014

Source: elaborated by the author based on [1].

The "sustainable" countries, which had similar indicators in 1990, have managed to achieve better results in 25 years. The average GDP per capita of these countries in 2014 was 70 thousand US dollars (the value has tripled). The dynamics of the countries among themselves also have similar signs, which confirm the correctness of the isolation and grouping of countries.

The third group of countries - countries with accelerated development - show more rapid dynamics compared with previous groups. The particularly it is distinct pace of accelerated development of Ireland and South Korea. Instead, the average GDP per capita in 2014 among accelerated economies was only $ 25,000, which, of course, is not enough to overtake the developed countries.

Here the parameters of GDP are incomplete, if not reflect the growth rates of this indicator. The corresponding averaging values are reflected in Fig. 19.4. The graph clearly confirms in practice the theoretical provisions that the growth rate of countries with accelerated development is 1.5-2 times higher than the rates of developed countries. Only those countries with sustainable development that have managed to make up for them can be compared, but this is more an exception to the rules.

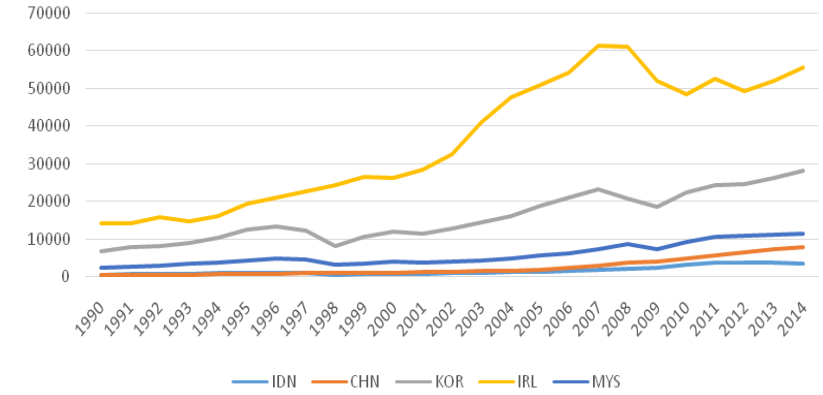

Fig. 19.3. GDP per capita in US dollars rapidly accelerating over the years 1990-2014

Source: elaborated by the author based on [1].

One can conclude that the analysis of GDP in terms of absolute values, GDP per capita and the growth rate of gross product made it possible to verify the correct choice of countries and their grouping. In the further analysis, these data will be needed to determine the correlation between GDP and other indicators, as well as to construct a correlation-regression analysis.

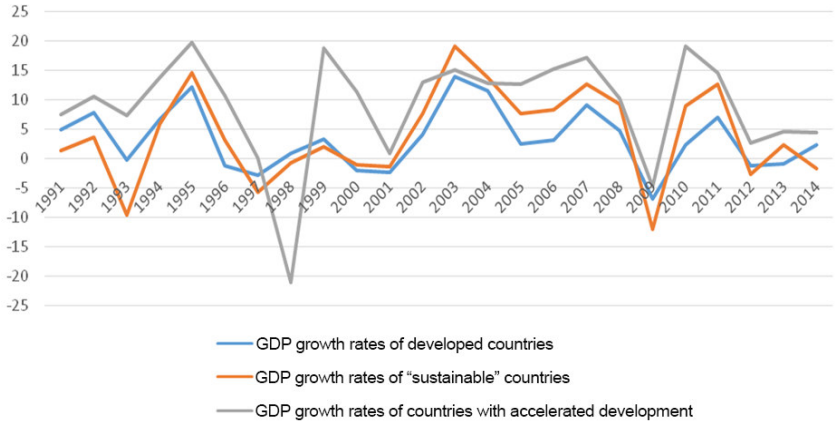

Fig. 19.4. A comparative analysis of the GDP growth rates of the analyzed countries during the years 1990-2014

Source: elaborated by the author based on [1].

The strategic parameter has an impact on GDP and will be useful for researching the impact of accelerated economic development on the environmental state of production, that is, the volume of emissions of pollutants into the atmosphere. In essence, emissions into the atmosphere of pollutants are the inflow from the sources of emissions into the air of pollutants that can have an adverse effect on public health and the environment [6]. When calculating the indicator, all pollutants entering the atmospheric air are taken into account as after the passage of dust treatment plants (as a result of incomplete trapping and purification) on organized pollution sources, and without purification, from organized and unorganized sources of pollution.

Emissions are measured in tons (kilotons), and also have two expressions - the absolute index and emissions per person. As in the case of GDP, for a more accurate analysis, we reflected the growth rate of emissions. Thus, we have identified the statistical series of these countries at the appropriate time interval for the following pollution indicators:

- Emissions of CO2 and other harmful substances in kilotons (1000 tons);
- Emissions of CO2 and other harmful substances per person in tones;
- Growth rates of emissions of CO2 and other harmful substances.

The analysis of emissions has shown that in absolute terms, the greatest impact on the environment today is carried out by developed countries - an average of 9.2 tons of CO2 emissions per capita. Countries with accelerated development in 2014 give them only a few tenths - our average figure for the year before in accelerated development countries was 8.9 tons per person.

As can be seen from the chart in Fig. 19.5, over the previous 25 years developed countries began to gradually get rid of environmentally hazardous industries. Average emissions decreased by 2.3 tons per person.

Interestingly, the countries with ecological development at the beginning of the analyzed period had a significantly lower emission value, but the pace of their further decline was lower than that of developed countries, due to which the average emission factor of the "sustainable" countries was 7.79 tons per person in 2014 - only a ton less (Fig. 19.6).

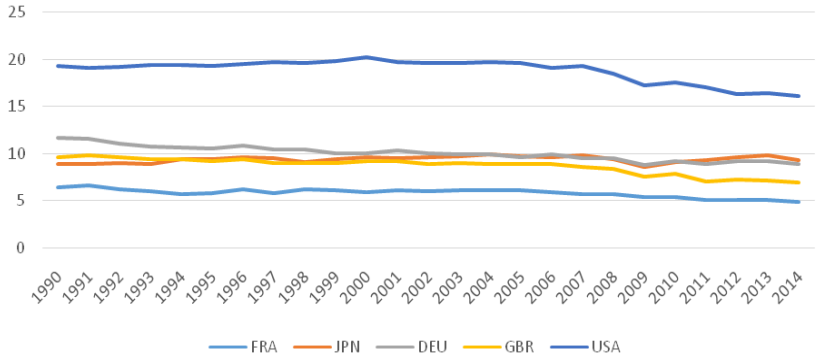

Fig. 19.5. Emissions of harmful substances per person in tones of developed countries during 1990-2014

Source: elaborated by the author based on [1].

The thesis about the negative impact of accelerated development on the environment can already be partially confirmed by analyzing the dynamics of the increase of emissions into the atmosphere of harmful substances in the last five selected countries. As we see from the graph in Fig. 19.7, in the early 1990's the average value of emissions was at the level of 4.1 tons per person. However, during the period of rapid economic growth of the economy, this indicator began to increase - to the above 8.9 tons per person.

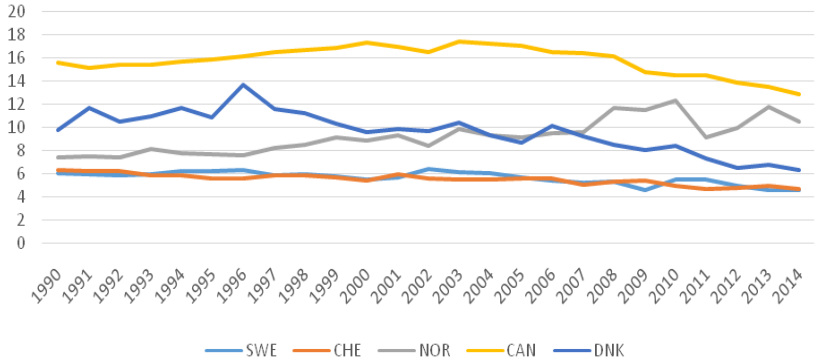

Fig. 19.6. Emissions of harmful substances per person in tones of sustainable countries during 1990-2014

Source: elaborated by the author based on [1].

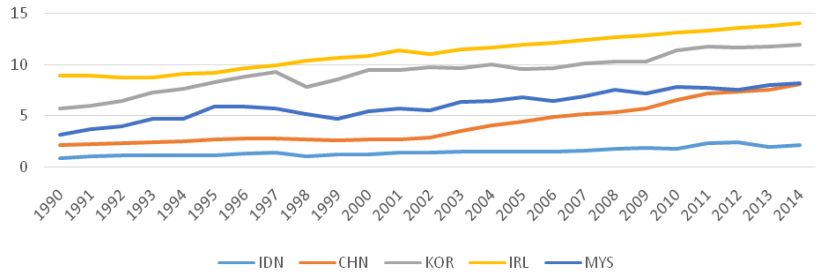

Fig. 19.7. Hazardous emissions per person in tones of countries with accelerated development during 1990-2014

Source: elaborated by the author based on [1].

A general picture of the rate of pollution can be seen using a generalized graphics illustrating the pace of CO2 emissions in the analyzed countries in the dynamics (Fig. 19.8).

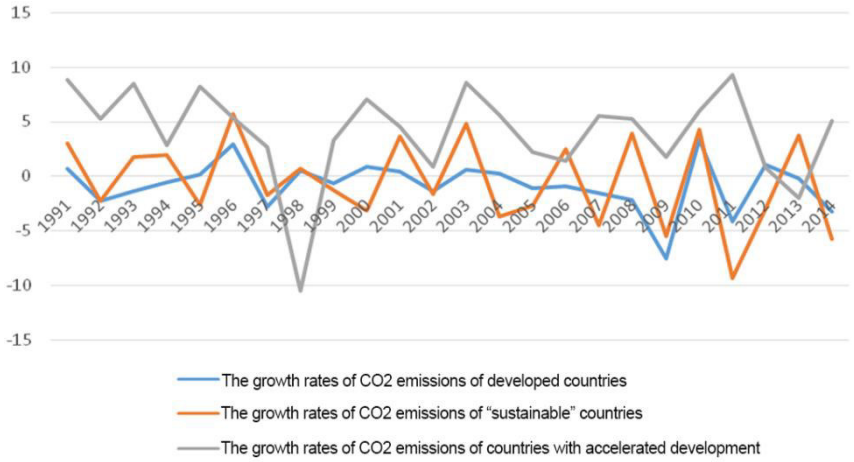

Fig. 19.8. Comparative analysis of the growth rates of CO2 emissions of countries analyzed during the years 1990-2014.

Source: elaborated by the author based on [1].

Due to this schedule, there is clearly a slow decline in the emission rates of harmful substances in developed countries, the wave-like downward nature of the emission rates of "sustainable" countries, as well as periodic growth and a steady increase in the rates of emissions

from countries with accelerated development. However, in order to make a substantiated conclusion on the impact of accelerated economic development on the ecology of countries, it is necessary to analyze one more indicator, namely, the sectoral structure of GDP and the relationship of GDP, CO2 and the size of the sectors of the economy of these countries.

In the context of the application of the theory of a three-sectoral economy, the strategic parameter of the economic development of the countries of the world is the dynamics of the main sectors of the economy in the selected countries during the years 1990-2014 [1].

The logic of comparative analysis for this indicator includes two stages:

- Comparison and analysis of absolute values - the percentage of this sector in the GDP of a particular country;

- Calculation of the growth rate of the sector as a percentage of GDP and the comparison of data between countries and groups of countries.

The sectoral structure of countries as a percentage of GDP in 1990 and 2014 is presented in Table 19.4.

Interesting in terms of the analysis of accelerated economies is a comparison of these countries data for 1990 and 2014. In particular, the share of the primary sector in GDP of countries with accelerated development at the beginning of the analyzed period averaged 10-15 percent, which is almost ten times higher than developed and stable countries. However, by 2014, this gap has dropped significantly, and the share of GDP in the third group of service sector countries has almost reached the level of developed countries. At the same time, the manufacturing sector remains very powerful and substantial in accelerated countries. It is he, in our opinion, the cause of the negative impact of accelerated development on the environment. However, this thesis should be checked using correlation-regression analysis.

Fig. 19.9 illustrates the growth rates of the secondary sector in the GDP of the analyzed countries. As can be seen from the graph, among the developed and constituted states, there is a clear tendency to reduce the share of the production sector (growth rates have almost never been positive). However, countries with accelerated economies either sustained this indicator at a sustainable level or even increased it. As a result, the average for five countries decreased by only 2% - from 39.4 to 37.4.

Table 19.4

Sector structure of GDP of countries analyzed for 1990 and 2014

Country	1990			2014		
	Extractive sector	Processing sector	Sector of services	Extractive sector	Processing sector	Sector of services
I. Economically developed countries						
France	3,50	26,91	69,59	1,73	19,57	78,70
Japan	2,12	38,05	59,83	1,17	26,86	71,97
Germany	1,20	37,44	61,36	0,78	30,53	68,69
UK	1,38	29,23	69,39	0,68	20,15	79,17
USA	1,58	34,47	63,95	1,33	20,69	77,98
II. "Sustainable" countries						
Sweden	3,56	31,56	64,88	1,34	25,74	72,92
Switzer-land	2,28	31,27	66,45	0,75	25,67	73,58
Norway	3,36	33,23	63,41	1,61	38,06	60,33
Canada	3,03	50,91	46,06	1,63	27,31	71,06
Denmark	3,78	26,13	70,09	1,58	22,83	75,59
III. Countries with accelerated development						
Indonesia	20,93	42,18	36,89	13,34	41,90	42,76
China	26,58	41,03	32,39	9,06	43,10	47,84
South Korea	8,22	38,19	53,59	2,33	38,06	59,61
Ireland	8,91	33,40	57,69	1,46	26,69	71,85
Malaysia	15,22	42,20	42,58	8,87	37,16	53,97

Source: elaborated by the author based on [1].

It is also interesting that the growth rates of the secondary data sector in the countries have never been negative. This indicates the interconnection between accelerated development, GDP growth and expansion of production, which in turn creates additional harmful emissions into the atmosphere. The level and significance of this influence will be discussed in a further study.

On the other hand, considering the three-factor model, it is not necessary to reject the analysis of the services sector. In particular, as can be seen from Fig. 19.10, the pace of growth in the provision of services to countries with accelerated development is also quite significant.

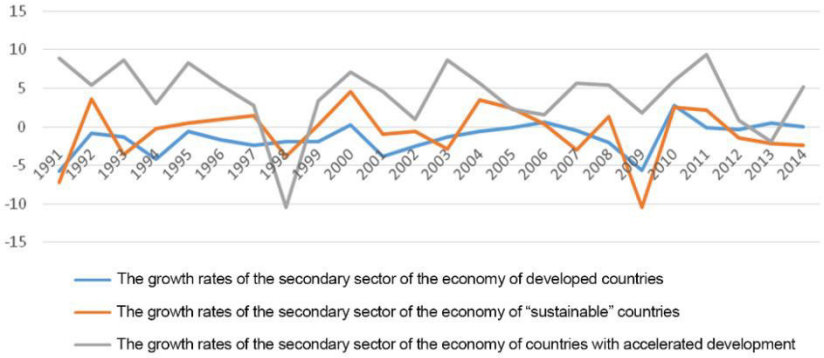

Fig. 19.9. The growth rates of the secondary sector of the economy of the analyzed countries during the years 1990-2014

Source: elaborated by the author based on [1].

Sustainable and developed countries, having achieved harmonization of interests and following the world tendencies, support the growth of the share of services sector in GDP at a stable level - about 2-3% per year. Instead, accelerated countries, along with the development of a powerful production system, are actively increasing the service component of their own economy - the share of this sector has risen from an average of 42% in 1990 to 55% in 2014. Ireland has achieved significant success here, raising this figure by 14%.

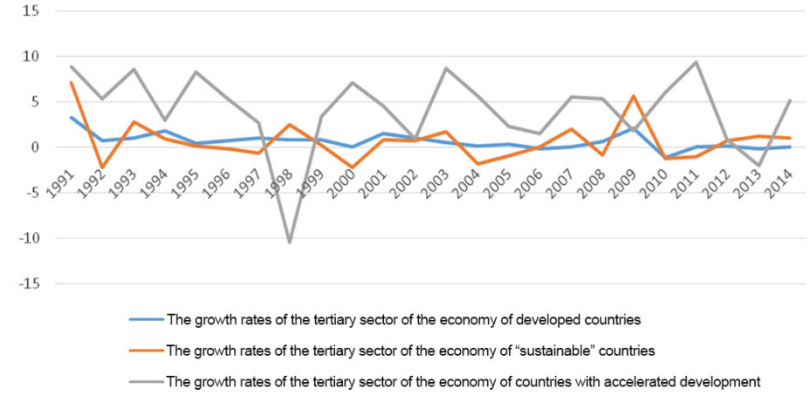

Fig. 19.10. The growth rates of the tertiary sector of the economy of the analyzed countries during the years 1990-2014

Source: elaborated by the author based on [1].

Having selected all these indicators, it's worth moving to a correlation-regression analysis of the interdependence of data among themselves. The first step is to determine the correlation between the indicator groups:

- GDP and emissions;
- GDP and primary (extractive) sector of the economy;
- GDP and secondary (manufacturing, manufacturing) sectors of the economy;
- GDP and secondary (service) sectors of the economy;
- Emissions and primary (extractive) sectors of the economy;
- Emissions and secondary (manufacturing, manufacturing) sectors of the economy;
- Emissions and secondary (service) sectors of the economy.

The linear correlation coefficient (or Pearson correlation coefficient) developed by Carl Pearson, Francis Edgeworth and Raphael Weldon (English) in the 90s of the XIX century is calculated by the formula:

$$r_{xy} = \frac{cov_{xy}}{\delta_x \delta_y} = \frac{\sum(X-\bar{X})(Y-\bar{Y})}{\sqrt{\sum(X-\bar{X})^2}\sqrt{\sum(Y-\bar{Y})^2}} \quad (9.4)$$

$\bar{X} = \frac{1}{n}\sum_{t=1}^{n} X_t$; $\bar{Y} = \frac{1}{n}\sum_{t=1}^{n} Y_t$- the average of the samples.

The correlation coefficient varies from minus one to plus one [7]. In this case, their criteria are estimated on the Chaddock scale:

$0{,}1 < r_{xy} < 0{,}3$ – weak correlation;

$0{,}3 < r_{xy} < 0{,}5$ – moderate correlation;

$0{,}5 < r_{xy} < 0{,}7$ – tangible correlation;

$0{,}7 < r_{xy} < 0{,}9$ – high correlation;

$0{,}9 < r_{xy} < 1$ – very high correlation.

The first pair for correlation analysis – it is the relationship of GDP and CO2 in groups of countries. By applying the CORREL formula in Excel, we obtained the following results (Table 19.5).

This table illustrates surprisingly significant results. First of all, pay attention to the first two groups of countries - developed and those who apply the concept of sustainable development. Indicative is the fact that countries from both groups have good (on the Chaddock scale - tangible and high) inverse correlation between GDP and emissions of harmful

substances. It can be argued that with the growth of the gross domestic product, the value of CO2 every year is becoming smaller, while in the stabilized countries, this dependence is expressed brighter.

Table 19.5

Calculated correlation coefficient between GDP and CO2 of selected groups of countries during 1990-2014

Country	Correlation coefficient
I. Economically developed countries	
France	-0,782174599
Japan	-0,674342234
Germany	-0,855603157
UK	-0,745885044
USA	-0,692020085
II. "Sustainable" countries	
Sweden	-0,785804487
Switzerland	-0,894599482
Norway	-0,81409477
Canada	-0,787658373
Denmark	-0,781545974
III. Countries with accelerated development	
Indonesia	0,93228247
China	0,977384695
South Korea	0,903991757
Ireland	0,92558984
Malaysia	0,907482319

Source: calculated and elaborated by the author.

It is against the side of a country with an accelerated economy, in which the dependence of GDP and emissions is direct, and the same - tangible. This statistically confirms the fact that accelerated development occurs without taking into account the environmental factor, due to the increase in production. However, it will be possible to fully confirm or refute this thesis only after an analysis of the relationship of emissions and the sectoral ratio of the GDP of the countries in question.

We will conduct a correlation-regression analysis of the dependence of GDP and emissions on the basis of one country from each of the three groups of countries.

The reliability of the data approximation was performed in a tabular manner and using a linear trend diagram with MS Excel tools. Close to one, the value of the accuracy of approximation (0.911) indicates a good coincidence of the curve with the data, and therefore it can be argued that the inverse correlation of the two indicators is high (Fig. 19.11). Their dependence can be described by the equation: y = -0,104x + 11,413.

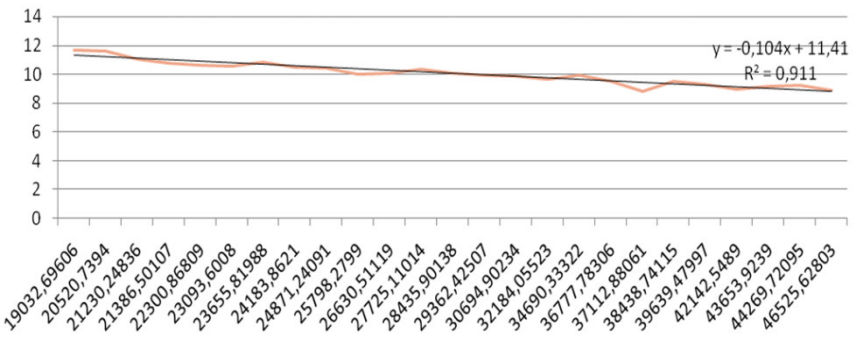

Fig. 19.11. Correlation-regression analysis of Germany's GDP and emissions of harmful substances

Source: calculated and elaborated by the author.

In the second group of countries with sustainable development, we will check the accuracy of the approximation on the example of Switzerland (Fig. 19.12). Here the index was 0.835, which also indicates a high correlation, which can be described using the equation: y = -0.0591x + 6.2903.

The third group of countries is analyzed on the example of China (Fig. 19.13). The level of approximation of the dependence is 0.870, the equation of equation - y = 0.2474x + 0.94. As we see, such data confirm the initial correlation analysis. It can be argued that there is a correlation between the groups of indicators, for analyzing the depth of which we will analyze the dependence of other indicators.

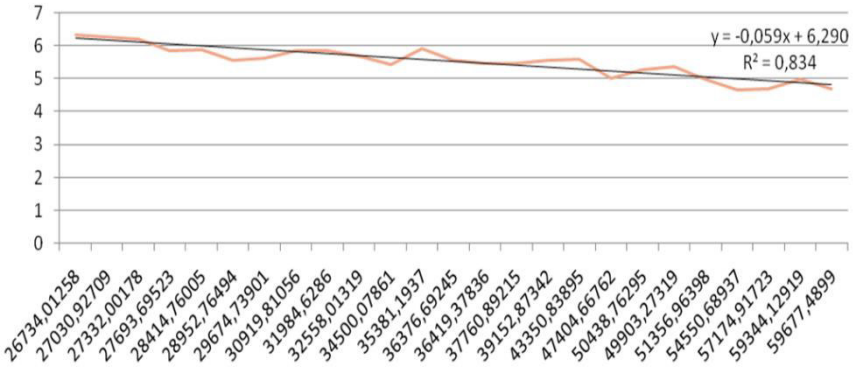

Fig. 19.12. Correlation and regression analysis of Switzerland's GDP and emissions of harmful substances

Source: calculated and elaborated by the author.

We will analyze the interdependence of GDP and the sectoral structure of the economy, using three methods of calculating GDP - absolute values, per capita and increment. Table 19.6 shows averages of correlation.

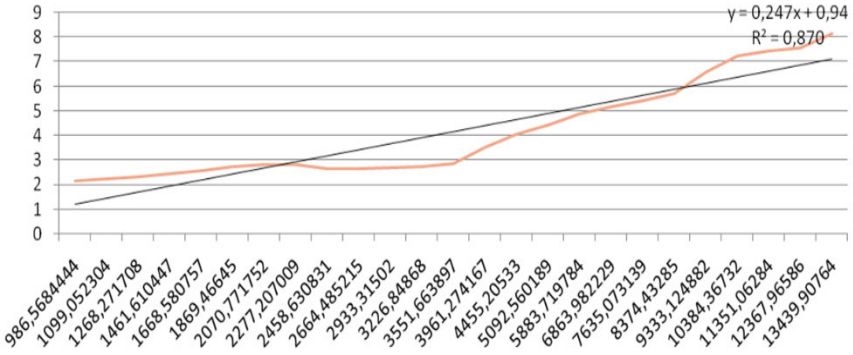

Fig. 19.13. Correlation-regression analysis of China's GDP and emissions

Source: calculated and elaborated by the author.

Table 19.6

The average correlation coefficient between GDP and the sectoral structure of the economy of selected groups of countries during 1990-2014

Country	Correlation coefficient		
	Primary sector	Secondary sector	Tertiary sector
I. Economically developed countries			
France	-0,866087644	-0,889534074	0,89226347
Japan	-0,520677737	-0,595284259	0,591542376
Germany	-0,794241855	-0,529347252	0,554098492
UK	-0,906726762	-0,922160008	0,925127659
USA	-0,579468977	-0,830662244	0,829719361
II. "Sustainable" countries			
Sweden	-0,721899939	-0,646066991	0,745844166
Switzerland	-0,734398716	-0,629706889	0,658204342
Norway	-0,817985254	-0,742896397	0,708265515
Canada	-0,803465802	-0,745949679	0,754400721
Denmark	-0,879288292	-0,565565974	0,826230746
III. Countries with accelerated development			
Indonesia	-0,691750473	-0,011233186	0,65762647
China	-0,753972674	-0,013938423	0,84106407
South Korea	-0,871901073	-0,010492965	0,710488943
Ireland	-0,882761068	-0,436472535	0,823047848
Malaysia	-0,490938645	-0,631158269	0,901056753

Source: calculated and elaborated by the author.

Analysis of the data in the table shows that the increase in GDP of all countries leads to a gradual reduction of the share of the primary (extractive) sector of the economy in the domestic gross domestic product of the country (the inverse correlation). The correlation coefficients vary between countries, but in general, given the above classification of Chaddock, the relationship is tangible and high. As expected, the correlation between GDP and the service sector in all countries would be straightforward and high. This shows the great role of the service economy in developing countries. At the same time, the greatest correlation is observed in the developed countries.

The most interesting from the point of view of the analysis is the correlation between the gross domestic product and the secondary (mining) sector. For developed countries, the link is expressed in reverse

- an increase in GDP leads to a gradual decrease in its composition of production elements, most of which, as has already been clarified, goes into services (a very high correlation for Chaddock). The "sustainable" countries have similar dynamics, but the correlation connection here can be classified as simply "high".

The situation with countries adhering to the strategy of accelerated economic development is not so pronounced. As one might expect from the analysis of Fig. 19.14, the change in the gross domestic product during the years 1990-2014 did not significantly affect the change in the share of the manufacturing sector in the economies of these countries. This suggests that these states are only on the path to development and entry into the post-industrial era, and therefore cannot fully abandon the prevailing number of production enterprises.

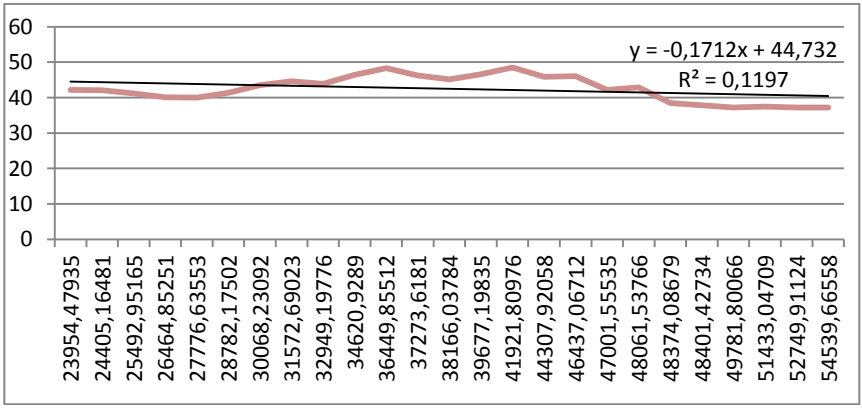

Fig. 19.14. The interdependence of Malaysian GDP and the secondary economy over the 1990-2014 period

Source: calculated and elaborated by the author.

Taking into account the organic link between strategic, economic and environmental parameters of economic development in the countries of the world, it is important to research the impact of harmful emissions on the state of the environment, as well as determine which sector of the economy plays a leading role in accelerated developing countries (see Table 19.7). It will finally be able to find out if really accelerated countries, pursuing indicators of developed

countries, do not care about their own environment, and therefore this path of development requires conceptual rethinking.

Table 19.7

The average correlation coefficient between emissions of hazardous substances and the sectoral structure of the economy of selected groups of countries during 1990-2014

Country	Correlation coefficient		
	Primary sector	Secondary sector	Tertiary sector
I. Economically developed countries			
France	0,703026656	0,804585677	-0,89226347
Japan	0,399074798	0,454450305	-0,591542376
Germany	0,861010034	0,827616826	-0,554098492
UK	0,720759396	0,847636732	-0,925127659
USA	-0,027384043	0,426456084	-0,829719361
II. "Sustainable" countries			
Sweden	0,645150306	0,765108808	-0,745844166
Switzerland	0,853669831	0,781236438	-0,658204342
Norway	0,777978258	0,636173414	-0,708265515
Canada	0,302740302	0,347205857	-0,754400721
Denmark	0,706402925	0,595780987	-0,826230746
III. Countries with accelerated development			
Indonesia	-0,803668316	0,185546347	0,357626447
China	-0,819779046	0,323224129	0,84106407
South Korea	-0,948451463	0,467784288	0,710488943
Ireland	-0,900812476	0,505194877	0,823047848
Malaysia	-0,708266049	0,367950727	0,901056753

Source: calculated and elaborated by the author.

Indicators of developed countries in this context are quite expected - we have received a direct high correlation between data arrays. This indicates to the close interdependence between the emissions of harmful substances and the decline of the traditional sectors of the economy - extraction and processing. The decreasing percentage of pollution leads to the separation of harmful industries. There is an inverse relationship between the tertiary sector and CO2. The transition of the economies of postindustrial countries to the production of intangible goods and services positively affects the state of the environment. Let's examine this thesis using a correlation-regression analysis in one of the countries (Fig. 19.15).

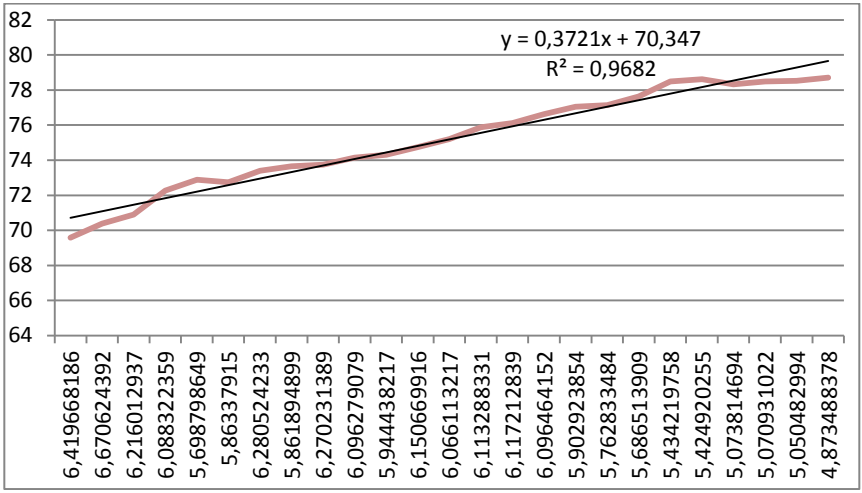

Fig. 19.15. Correlation and regression analysis of dependence of emissions of harmful substances of France and tertiary sector of economy during1990-2014

Source: calculated and elaborated by the author.

The level of dependency approximation is 0.968, the dependency equation is y = 0.3721x + 70,347. Thus, the connection is indeed significant, and therefore one can assert the reliability of the theses put forward.

The second group analyzed is the countries that apply the concept of sustainable development. As can be seen from Table 19.7, the figures are almost identical to the previous group. The reduction of emissions, which in the constituted countries occurs at a faster pace, positively affects the reduction of the industrial sectors of the economy, giving an opportunity to the development of the service sector (correlation between the data high back). Below is only Canada. This is due to a somewhat higher level of emissions of harmful substances per person in the country, although the share of the manufacturing sector during the years 1990-2014 decreased at the level, and even faster than other countries in this group.

On this basis, it makes sense to conduct a correlation-regression analysis of the dependence of emissions and changes in the secondary economy of Canada (see Fig. 19.16).

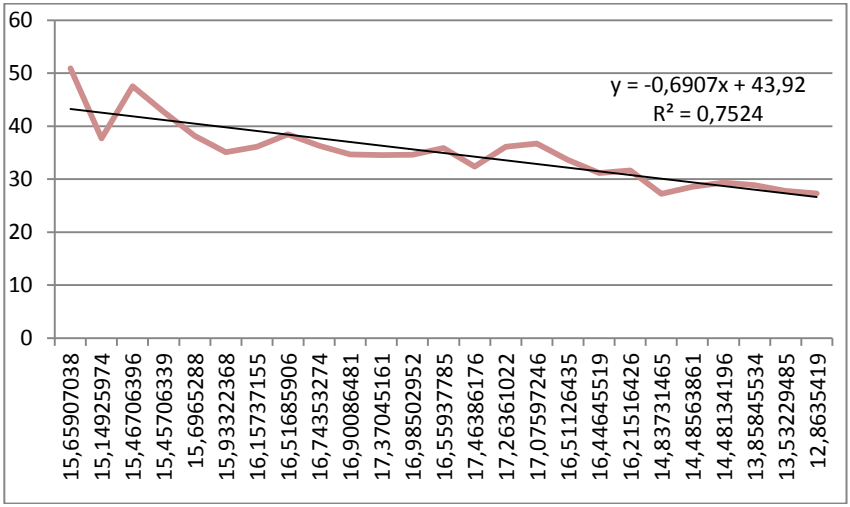

Fig. 19.16. Correlation and regression analysis of dependence of harmful substances emissions of Canada and the secondary sector of the economy during 1990-2014

Source: calculated and elaborated by the author.

The level of approximation of the dependence is 0.752, the equation of dependence is y = -0.6907x + 43.92. As we can see, the analysis confirmed less, than in other countries of the group, the connection between data, the causes of this phenomenon were noted above.

The completion of the analysis is to research the relationship between emissions of harmful substances in the atmosphere and the change in the sectoral structure of GDP of developing countries. Previously, we put forward the thesis that countries that accelerate their economies have a negative impact on the environment. We have already seen this by analyzing the dynamics of emissions and GDP per capita. However, what sector of the economy, as a percentage of GDP, affects the situation most?

In the end, the answer to this question can already be seen in Table 19.7. In the first column, reflecting the dependence of CO2 emissions and development of the primary sector of the economy, there is a clear inverse relationship. Given the fact that the emissions per capita of these countries over the previous 25 years have grown moderately (Fig. 19.7), this indicator can be interpreted as a reduction in the share of extractive industry, which correlates with the increase of

emission rates. These dynamics are observed among other groups of countries.

The difference between the analyzed groups is noticed when considering the interdependence of emissions and the secondary sector of the economy. Correlations can be classified as moderate. Turning to Table 19.4, it can be noted that the share of the manufacturing sector in accelerated development countries has remained almost unchanged, while in developed and "stable" countries it, as well as the share of GDP in the primary sector of these countries, has been actively diminishing.

We examine this parameter in more detail by making a correlation-regression analysis of the interference of the emissions of harmful substances from each of the "accelerated" countries and their share of the manufacturing sector in GDP over the years 1990-2014. The graph in Fig. 19.17 shows the results of the analysis for one of the countries.

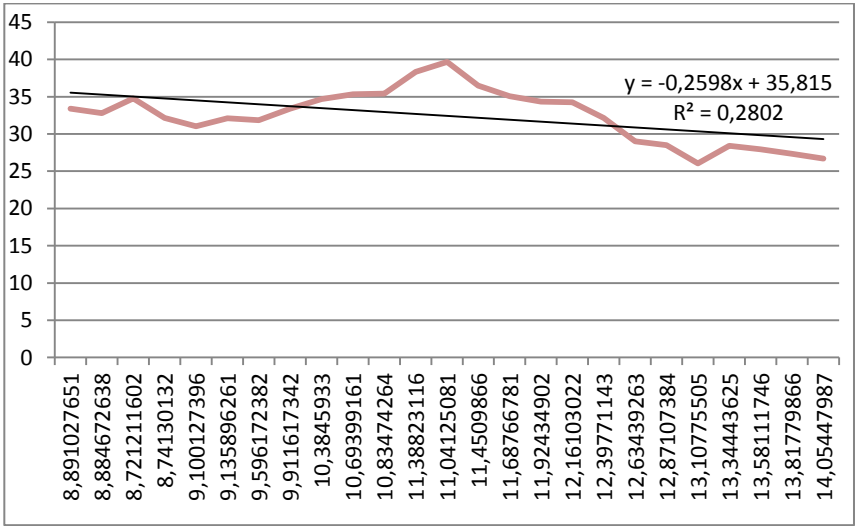

Fig. 19.17. Correlation and regression analysis of the dependence of emissions of harmful substances in Ireland and the secondary sector of the economy during 1990-2014

Source: calculated and elaborated by the author.

The level of approximation of the dependence is 0.280, the equation of equation - y = - 0.2598x + 35.815. The calculation confirmed

the moderation of the relationship between the data. On the one hand, based on the correlation-regression analysis, it can be said that the level of emissions does not have much effect on the share of the secondary sector of the GDP of the "accelerated" countries. On the other hand, it's no wonder that developed and "sustainable" countries were chosen for comparison. After verifying the data obtained with their indicators, we understand that for the ecological development the share of the material goods production sector in the post-industrial society should also decrease. Its stable indicators of accelerated countries for 25 years have a negative impact on the environment.

In the end, the analysis of the third sector's interactions - the production of services - and the emission of harmful substances into the atmosphere shows a direct connection, which is classified by Chaddock as moderate (Indonesia), high (China, South Korea, Ireland) and very high (Malaysia). That is, the growth rate of emissions also leads to an increase in the service sector, but this happens in an uneconomical way.

Thus, by choosing to compare the most striking representatives of the three groups of developed countries, developed and stable and with accelerated development, and applying a correlation-regression analysis to them, by means of studying certain indicators in practice, the thesis was proved that accelerated economic development, allowing rapidly reach the level of developed countries and have a rate of growth that is 1.5-2 times higher than the pace of the first, negatively reflected on the ecology of the states that hold this path of development. In turn, developed countries also have a correlation between the level of GDP, emissions and the sectoral structure of the economy. In the latter, as it should be in countries with a post-industrial economy, the sector of services prevails, which sometimes reaches 75-80% of GDP.

Consequently, the current strategic parameters of the economic development of the world, describing their production potential, the dynamism of its sectoral division and the constant harm that it inflicts on the environment both at the national and the planetary level, testifies to the need to develop joint international measures aimed at ensuring a harmonious growth of national farms. In the period of globalization, it is possible only with the balanced use of the advantages inherent in innovative directions of development of comprehensive cooperation of the countries of the world community.

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CHAPTER 20

AREAS OF CREATION OF INNOVATIVE MARKETING COMMUNICATIONS IN THE INTERNATIONAL SOCIO-CULTURAL SPHERE

Oleksii G. Tonkykh

The development, implementation, and use of innovations can provide significant competitive advantages in the implementation of international economic relations. Innovative marketing communications are particularly important because they must provide new communication processes in the field of foreign economic activity and provide innovative marketing tools for subjects of international economic relations to promote their products and services in international markets. Innovative marketing communications in the international socio-cultural sphere should provide an effective way of communicating information about a product, service or idea to an external target audience, that is, to a group of foreigners who receive marketing appeals and have the opportunity to respond to them [6, c. 68].

Fundamentals of the theory of international communications were laid by American political scientist H. D. Lasswell and found their development in the writings of the school of scientific management (F. Taylor) and "social systems" (L. Bertalanffy, A. Rapoport), foreign marketers (F. Kotler, G. Assel, E. Dichtl, X. Hershgen, etc.) [5, p. 99]. "The communicative formula" (Lasswell) is simultaneously a model of the study of the communication process, and the program of communicative action is deployed in this it is its undoubted advantage. In my opinion, it has a significant disadvantage, which manifests itself in the absence of feedback, through which we consider international communications as a two-way process.

International marketing communications are any form of communication in which the restaurant business uses to inform or remind the public about its services and international socio-cultural activities or to influence the society [5, p. 100]. An enterprise operating in the international market should explain its position on a particular issue to foreign counterparties, provide information on services that will

appear on the market in the near future, about stimulating the purchase, etc. All this can be done with the help of brand and trademarks, advertising appeals in the mass media, through international exhibitions and with the help of modern information technologies that provide the process of international marketing communications.

In order to eliminate all accidental interactions with international counterparts, service providers in the economically developed countries are entrusted by special advertising agencies with the processing of the most important advertising appeals and holding of important international advertising campaigns, holding in the state of highly skilled public relations specialists for the formation of the appropriate image of the enterprise of socio-cultural spheres and their services, as well as sales promotion specialists, which enables timely response to changes in supply and demand in the international socio-cultural services market.

Innovative marketing communications in the international socio-cultural sphere of the restaurant industry are intended to persuade foreign consumers and other participants in the marketing process, therefore restaurant service providers seek to adopt the appeal to each group of interested persons. In the process of business development, the manufacturer expands the range of the most important for him participants in the marketing process, expansion of the field and international marketing communications. The development of international marketing communications is influenced by the state of the environment in which business and its potential customers are located. The unconditional influence on the sphere of marketing communications in the socio-cultural sphere makes the state of the economy, culture and scientific and technological progress. Also, it is necessary to take into account international factors, the achievements of other countries in the field of technologies of marketing communications in the socio-cultural sphere today can be easily perceived in Ukraine [9].

In today's conditions of development of international economic relations of the world market of a socio-cultural sphere, which is undoubtedly related restaurant business, new information technologies and Internet network allow reducing expenses for implementation of innovative marketing functions. Managing and sharing information is extremely important to ensure the effectiveness and efficiency of any marketing channel. The development of modern information

technologies and the Internet has led to changes in the management of marketing channels. The greater the degree of sharing of electronic data and the development of advanced technologies by the channel participants, the greater the benefit to each participant; in this case, it is a synergistic effect that will positively influence the creation of innovative marketing communications in the socio-cultural sphere for each business participant. Thus, innovative marketing technologies have an impact on traditional channels of marketing in the restaurant business and provide opportunities for changing markets, moving from local to international, changing the competition principles and providing new means of competition [4].

The current state of most international markets of the socio-cultural sphere is characterized by an increase in the information and value of both users and sellers. The computerization of society is increasing every time. And although consumers receive more and more information every time, the company cannot continuously increase their communications volumes. This is why it is necessary to pay attention not only to the quantitative and qualitative characteristics of international communications, but also to develop innovative marketing communications [7].

The emergence of the Internet and its further development has made changes in the modern view of the means of advertising and communication in the socio-cultural sector of the restaurant industry. The Internet has combined the interactive nature of communication and personalization capabilities. The Internet network is a special media medium that is different from traditional media. Distinctive is a multidirectional communication model in which each subscriber has the ability to access other subscribers and the feedback option. Also, the feature of the Internet environment is related to the active role of consumers due to control over the search for information due to various search and navigation mechanisms. The interactive nature of the network environment can increase the effectiveness of the participants' interaction in the marketing communications social-cultural sphere.

In the socio-cultural sphere, in particular, in the restaurant business, there are many information technologies that provide marketing communication communications between the company and potential consumer. Such information technologies include SMS marketing,

Bluetooth marketing, websites, electronic surveys and questionnaires, mobile applications for Android and iOS smartphones, systems and services for fixing site visits.

SMS marketing creates the process of marketing communication through SMS service. Such marketing involves the dissemination of marketing information about the service by sending it via SMS to mobile phones of subscribers-consumers. Due to its interactivity and prevalence, SMS marketing is considered an effective way of direct communication with the consumer and is one of the tools of so-called direct marketing in the restaurant business. The forecast of the development of this segment of advertising is very optimistic because SMS-marketing uses as a channel mobile phones, which is a personal means of communication.

Bluetooth marketing is the next field of innovative marketing communications in the international socio-cultural field, and this technology has not been fully explored, and we are witnessing the emergence of new Bluetooth technology tools for business communications each year. Bluetooth marketing helps to realize marketing communications using Bluetooth technology in close proximity to target audience [7].

The growth in the number of mobile phones around the world has reached the limit when large and relatively small companies are beginning to actively explore the possibility of using a mobile phone as a promotional platform. In this case, the traditional technologies of mobile marketing have already significantly lost their relevance and effectiveness. As a result, innovative areas of mobile marketing such as Bluetooth marketing, direct advertising with the use of global positioning technology are gaining momentum.

The use of Bluetooth technology allows you to arrange for the secure and extremely fast delivery of various media content to users' mobile phones. In this case, the user has the opportunity to refuse to receive messages in general and selectively receive only those files that interest him. Thus, this marketing channel is not obsessive, similar to television or SMS advertising, but involves the active participation of the user in the process, that is, it has much more efficiency.

In the marketing communications of the socio-cultural sphere, such a tool is effective thanks to Bluetooth technology specificities, which involves working with users in the immediate vicinity and allows

promotional campaigns with a precise link to any object, as well as actively engaging consumers to participate in Bluetooth-shares through active visualization. On the other hand, it limits the scope of the use of this technology to attract a mass audience. But here comes the help of the effect of "viral" marketing, when high-quality media, received by the user in the Bluetooth share, are transmitted from one phone to another in a circle of friends and acquaintances. Particularly, such technology will be very convenient for foreign delegations, tourists, and guests, as mobile devices transmit information about the user's language, and can receive the necessary information in the language of communication of a potential client.

The next marketing channel for communication with consumers, without which there cannot be any restaurant, is a website. From the point of view of marketing communications, the website provides a set of information blocks and tools for working with one or more segments of the target audience, while maintaining that the website supports more information displaying languages [3]. Creating a site allows you to expand the geographical area of service delivery, to receive information about the company at any convenient time - the visitor of the website can fully get acquainted with the restaurant and its services. One of the most effective innovative marketing communications in the socio-cultural sphere can be considered mobile Android and iOS apps that are a topical trend in the restaurant business. They ceased to be standard applications in the Smartphone and turned into a tool for marketing communications to form a positive attitude to the brand on an international scale [7].

From the point of view of marketing communications, the mobile application is an advertising medium and can be an element of international branding and a powerful information resource. Branded mobile applications allow companies to increase their loyalty to existing customers and attract new customers by motivating existing ones. Restaurants can have as a separate mobile application for their brand, and use the integration of the brand in an already-made application. Such promotional applications allow you to quickly and inexpensively advertise company services; often they do not have wide capabilities and carry a simple but necessary function that attracts the owners of mobile devices. Branded applications allow you to establish long-term communication with your customers. The mobile app can be advertised

both on the Internet and in traditional commercials and print media. Even if you develop your own application, its cost will be less than the production of an advertisement. With the development of innovations in marketing information technologies, the use of mobile applications to establish long-term communications with the consumer is a means of increasing the competitiveness of enterprises of the international socio-cultural sphere. In the restaurant business of the socio-cultural sphere, the most popular applications in Ukraine are «TripAdvisor», «AroundMe», «Eda.ua», «RWRD», «iL Molino», «Dominos», «Eurasia», «Kozyrna Karta», «MAFIA» та «McDonald's Ukraine».

We will consider the basis of the technology that provides international marketing communication and at some time implement innovative approaches. «TripAdvisor» is an application that lets you quickly find out which restaurants are nearby and read other people's thoughts about places of leisure (restaurants, cafes, hotels). The location is determined both by the GPS network and by the Wi-Fi connection [2, 3]. The Trip Advisor application (for mobile devices) is provided free of charge and has the following functions:

- Viewing reviews, opinions and photos taken by consumers;
- Choice restaurant by type of cuisine, pricing policy and consumer ratings;
- Using the "Nearby Me" function to find objects near or at the specified address;
- Getting answers to specific questions about traveling in forums;
- Adding your reviews, videos and photo;
- Adding hotels and restaurants a because of the sights that are not yet on «TripAdvisor».

The «AroundMe» program is an application that can quickly identify your location and find the closest bank, bar, gas station, hospital, hotel, movie theater, restaurant, supermarket, theater or a taxi nearby. "Around Me" shows a complete list of all institutions in the selected category, along with the distance to them from their location. For each item in the list, its location on the map is available and a route to it is viewed. One of the functions of "Around Me" is to add information to your contact list or send this information to other users. This app is free and available to all Android and iOS users [2, 3]. McDonald's also develops international marketing communications with its customers, keeps pace with competitors and launches the official McDonald's Ukraine

application. It helps you find prices in McDonald's, latest promotions and news, and find the closest to the city's restaurant network. This platform is free and available to all Android and iOS users. The mobile application meets the modern standards of interactive design and during work on it; developers have taken into account the features of behavioral models of users. The international component is implemented as a collection of available and affordable marketing information from customers [2, 3].

Any internet resource owner needs to know how it is informative, user-friendly and popular among visitors. This means that you need to get an idea of the resource attendance, the sections that are most in demand and whether visitors leave the site without reaching the goal. Those who link with their project far-reaching business plans, including servicing foreign customers, need more information about the site and its visitors. For example, you should take into account the audience of users, record the resources from which they came, how much time spent on the resource under study, how many pages they visited and where they went. It is also necessary to monitor the actions of visitors, in particular, to determine which information they show of increased interest in downloading, by which links are clicked. In general, the development of any successful project is impossible without accurate tools for analyzing its work, which will help you make the right decisions about the further development of the site, better understand the benefits of customers and increase the return on advertising on he local market in international markets.

To do this, the owners use the system to locate site visits. One such system is the international analytical system "Advantage Web Log Analyzer", designed to collect statistics of any site. Includes log analyzer and visit counter. Many professionals prefer this program [1].

The list of basic features of the Internet statistics program Advantage Web Log Analyzer:

- Ability to generate any report;
- Ability to generate reports to reports on any parameters;
- The number of filters is not limited by any criteria;
- The ability to build real-time reports;
- The possibility of marketing sales reports and costs;
- Visitors counter;
- Availability of own statistical server;

- The log analyzer is based on the analysis of the Apache log files;
- An unlimited number of sites and projects can be connected to the statistics system.

Users, choosing a system for collecting statistics, often face a situation where none of the services, none of the programs, are completely inappropriate for solving the tasks. The statistics system should be as flexible and accurate as possible. It is necessary that it can be used to view information about the level of attendance of the resource in all existing areas. The Internet statistics system should collect and store the full information about the site's visitors, as well as help in its advertising and promotion.

Consequently, the development of innovative marketing communications resources through the Internet has made changes in the modern view of the means of advertising and international communications. The Internet has combined the interactive nature of communication and personalization capabilities. The Internet Network is a new marketing communications environment of the socio-cultural sphere, different from the traditional media. Another is a multi-directional marketing communication model in which every subscriber of the network has the opportunity to address other subscribers and the possibility of feedback, therefore enterprises of the socio-cultural sphere actively use all information technologies that provide international marketing communications with consumers and constantly increase their competitiveness with their help.

Ukraine is now in a transitional stage to an information society, in the formation of which an important role is played by innovative marketing communications in the international socio-cultural sphere. Informatization is the most important factor in the economic growth of any economy, as evidenced by numerous studies conducted in recent years in the world. Information technologies are beginning to gain a dominant role in the development of modern society and the international socio-cultural sphere in particular.

The current market of international socio-cultural sphere and restaurant economy is characterized by active saturation of market space with information, increasing its significance and value. In these conditions, the processes of shaping the demand and preferences of consumers, making communication influence on them essentially complicate [3]. Under these conditions, the importance of developing

innovative marketing communications in the socio-cultural sphere becomes of growing importance.

Effective marketing communications activities are designed not only to provide the necessary knowledge about the characteristics and quality of goods and services, the conditions of entering into transactions, the features of the competitive offer, as well as to create a commitment to consumers, create an atmosphere of emotional understanding, benevolence and trust between the manufacturer and consumers, society.

The objective need to use innovative marketing communications to characterize information processes in society is determined by the peculiarities of the current stage of development of international market relations, which extend the possibilities of their application in the socio-cultural sphere.

With the current state of development of marketing communication processes, increasing the role of public opinion in Ukraine, before each enterprise of the socio-cultural sphere, there is a need for systematic informative-analytical, coordination and influential-controlling actions aimed at establishing relations with the public and its individual groups.

The search and creation of innovative marketing communication tools in the socio-cultural sphere radically transform the environment in which the modern person lives and communicates. A comprehensive network of communication creates the global unity of people, eliminates space and time in the usual sense, which makes the world perceive as a whole. There is a so-called globalization of consumers, and new means of communication (the Internet) not only provide the communication of people in any of the most remote and hard-to-reach places of our planet, and also affect the personal life of each of us [6, p. 86].

It turns out that now it is not enough to manage the behavior of people to direct their actions in the right direction. According to theorists of communications, it is necessary to manage the root causes of behavior, that is, what people think and feel, shape public opinion and need massive mood. The theory of communications gives recommendations on what to do to advance an individual from the stage of forming an initial attitude to an active state. Clearly, the deepening of theoretical studies of psychology and consumer behavior requires from the marketing services of a permanent initiative, non-traditional forms

of working with clients, that is, true creativity. Therefore, the importance of developing innovative marketing communications in the socio-cultural sphere is of particular importance.

The direction of the development of innovative marketing communications was influenced by the loss of traditional monopoly media on informing potential consumers in the socio-cultural environment, which opens up large opportunities for corporate media (both print and electronic). Corporate media are now competing with ordinary media and become profitable projects. The role of social media in the socio-cultural sphere is beginning to change. Previously, social platforms were used to create purely personal content, but nowadays, professional and work content are dominated by users that they exchange in real time.

Innovation in the practice of marketing communications requires a non-standard approach, creativity, new marketing tools and an electoral approach to each task. You cannot use the standard set of recommendations and strategies before. Dynamic technology development, changing perceptions and increased consumer demands complicate the task of marketers. In world marketing practice, such concepts as neuromarketing, Ambient-advertising, event-marketing have long been consolidated; Ukraine is only beginning to take the first steps in these directions.

The difficult economic situation in the country has led to a reduction in the number of enterprises in the socio-cultural sphere. In particular, Ukrainian restaurants restrict costs that are not directly related to the main activities. In the first place, the reduction affected the budgets allocated for special events, and this a painful hit on the domestic event-market. Enterprises in the socio-cultural sphere should actively develop innovative marketing communications, increase media attention through joint activities with industry press, and create and promote their own Internet sites and mobile applications. Ukrainian marketers should be prepared to use and adopt new tools of innovative marketing communications in their practice, as well as to the development and modification of existing tools.

The development of hardware information technology has increased the technical level of implementation of marketing communications in the socio-cultural field and gave a new direction to improve methods for their dissemination. In the restaurant industry, there are many

information technologies that provide marketing communications between the enterprise and the potential consumer. Such information technologies include SMS marketing, Bluetooth marketing, websites, electronic surveys and questionnaires, mobile applications for Android and iOS smartphones, systems and services for fixing site visits. SMS marketing is the process of marketing communication through the SMS service. Such marketing involves distributing marketing information about a product or service by sending it via SMS to mobile phones of consumer subscribers. Bluetooth marketing is a way to implement marketing communications using Bluetooth technology in close proximity to the target audience.

From the point of view of marketing communications, a website is a set of information blocks and tools for working with one or more segments of a target audience. Creating a site allows you to expand the geographical area of service delivery, to receive information about the company at any convenient time - the visitor of the website can fully familiarize himself with the enterprise, products or services.

In the socio-cultural sphere, in particular, the restaurant industry, one of the most advanced means of innovative marketing communication with the consumer is a mobile application that serves as an advertising medium and can be an element of branding and a powerful informational resource. Branded mobile applications allow companies not only to increase their client base but also to increase the loyalty of existing customers. Companies can have as a separate mobile application for their brand, and also use the integration of the brand in the already completed application. These promotional offers are quite fast and inexpensive advertising for many companies; often they do not have wide capabilities and carry a simple but necessary function that attracts the owners of mobile devices. Any owner of an Internet resource needs to know how informative, user-friendly and popular with visitors. Which means, at a minimum, you need to get an idea of the attendance of the resource, the sections that are in greatest demand, as well as whether visitors leave the site without reaching the goal. The one who connects with his project the far-reaching business plans, you need to have more information about the site and its visitors.

To do this, the owners use the system to locate site visits. One such system is Advantage Web Log Analyzer, which is designed to collect site statistics. Includes log analyzer and visit counter. Many

professionals prefer this program. The modern market is characterized by an active saturation of the market space with information, an increase in its significance and value. In these conditions, processes of forming demand and wishes of consumers, marketing communications influence on them essentially complicate.

New marketing practices in the restaurant business require a non-standard approach, creativity, new marketing tools and an electoral approach to each task. You cannot use the standard set of recommendations and strategies before. Dynamic technology development, changing perceptions and increased consumer demands complicate the task of marketers.

Enterprises in the socio-cultural sphere should combine their efforts in creating innovative marketing communications with consumers, and perhaps with each other for the exchange of relevant information, to increase the convenience for their customers in the domestic and foreign markets. This task can be achieved through mobile applications.

Ukrainian marketers should develop collaborative efforts to create innovative marketing communications in the socio-cultural sphere, in particular, to organize conferences, workshops, roundtables, brainstorming sessions and, at the same time, to combine joint efforts that will make use of the synergistic effect and adopt new marketing communication tools in their practice.

Innovative marketing communications in the socio-cultural sphere are the process of effectively communicating information about services or ideas to the target audience, that is, to a group of people who receive marketing appeals and have the opportunity to respond to them. The sphere of marketing communications is intended to convince consumers and other participants in the marketing process, therefore restaurant service providers are seeking to adapt their appeal to each group of interested persons. As the business grows, the manufacturer expands the circle of the most important members of the marketing process, expanding the scope and marketing communications. The development of innovative marketing communications is influenced by the state of the environment in which the business and its potential consumers are located. The unconditional influence on the field of innovative marketing communications makes the state of the economy, culture and scientific and technological progress. It is impossible not to take into account international factors, so, the achievements of other

countries in the field of technology of innovative international marketing communications can today be quite easily used in Ukraine.

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CHAPTER 21

INNOVATIVE ASPECTS OF THE DEVELOPMENT OF THE WORLD MARKET OF HOTEL SERVICES

Natalia V. Buntova

Many countries that do not have enough financial, scientific and technological resources necessary for large-scale industrial breakthroughs, now provide economic growth through innovative service sector development. Innovative development of the services sector should become a powerful source of economic growth, probably even more significant than technological innovation in the industry.

Is known, in the modern world, the country's sustainable development depends, above all, on maintaining its competitiveness in the world market. In turn, competitiveness is impossible without the conformity of scientific and technological progress to the world level. This means the need for a continuous and growing flow of innovation, mainly technological innovations. To a large extent, such innovations are nothing more than the results of intellectual activity.

Implementation of innovations in the field of services involves the interaction of many components that change the technology and organization of service delivery, gives impetus to new organizational and economic mechanisms. Innovation should be understood not only introduction into the economic circulation of a new product, but also a whole list of other innovations:

- fundamentally new or improved services (service innovations);
- fundamentally new or improved product classes (product innovations);
- fundamentally new or improved manufacturing processes and technologies (process-technological innovation);
- changed social relations in the enterprise (social and staff innovations);
- fundamentally new or improved production system.

Innovations in the service sector are aimed at the development of new services, their improvement, expansion of their application, provision of services, as well as the improvement and implementation of methods of production and provision of services.

In the era of globalization, innovation activity is constantly expanding. A country that is interested in attracting promising technologies is forced to create the most favorable conditions for innovative business.

The development of the world market for tourism and, as a consequence, its infrastructure element - the world market for hotel services - is characterized by an increase in the volume of investment. This manifests itself in enhancing its role in the socio-economic improvement of national economies, the creation of additional jobs, and the development of infrastructure.

The global tourism market is one of the fastest growing segments of the world economy. The share of international tourism accounts for about 10% of the world gross national product, 7% of world investments, 14% of world consumer spending, 5% of tax revenues. In Western Europe, North America and South-East Asia, every 13th jobs are in the tourism industry; in South-East Asia, every 15th employee is employed in the tourism business. Almost 60% of world expenses for international tourist trips are for Europeans. Next, representatives of the American continent - about 25%, and the inhabitants of Asia - are about 14%.

Traveling around the world with tourist destinations primarily inhabitants of industrially developed countries. Thus, the main consumers of overseas hotel and tourist services in Europe are citizens of Germany, Great Britain, Italy, France, the Netherlands, Austria, Sweden, Switzerland, Belgium, Spain, Denmark, Norway and Finland; in America - the USA, Canada and Mexico; in Asia - Japan, South Korea and Singapore. Citizens of the United States, Germany, Japan, Great Britain, Italy, France and Canada account for about 67% of the expenses of all tourists on our planet traveling to other countries. And on the inhabitants of the USA, Germany and Japan - almost 45%.

The main number of international tourists receiving and sending is concentrated in a small number of countries located mainly in Europe (in Austria, Switzerland, Finland, Denmark and Germany, almost every citizen travels annually) and North America. The share of the top ten countries of the world tourist market totals up to half of the international tourist arrivals and tourism revenues. Despite the uneven development of the tourist market, the ranking of the leaders of the countries will not change significantly. The largest exporters of travel services are France,

Spain, Italy, the USA, and importers - Germany, Japan, United Kingdom, USA. Countries that have an active balance in international tourism mainly send tourists (USA, Japan, etc.), which is explained by the higher level and value of services in the domestic market than in other countries.

International tourism, even in times of crisis, remains a powerful sector of the economy. Of course, the global financial crisis has had a negative impact on tourism. But compared to other industries, the negative impact of the crisis on the tourism industry was not so strong. And now tourism continues to bring substantial profits and income in foreign currency, and is also an effective generator of new jobs.

The results of the analysis of trends in the world market for tourist services show that tourism is really fast recovering. Two to three yearly recessions are atypical, positive dynamics can be observed already for the next after a crisis year. This suggests the extreme resilience of tourist demand fluctuating under factors such as the threat of security (1991, 2001, 2003, 2009), increase in the cost of tours during the financial and economic crisis (2010). The macroeconomic indicators of tourism development, its structural parameters in the world economy, high and consistent with the absolute importance of the sector's ability to recover in the medium and long-term. According to the statistical observation of the World Tourism Organization (UN WTO), world tourism is 10% of world GDP, every 11th occupied in tourism, 6% of world exports of goods, works and services, 30% of world exports of services [1], stable rates increase of tourist flows, arrivals and revenues from tourism.

Innovative technologies and infrastructural solutions should become a progressive and non-alternative platform for solving the problems of further stabilization and increasing rates of the main parameters of tourism development. The European Union (EU) in the European development strategy for 2020, stressed the need to support "smart, sustainable and comprehensive growth." The Europe 2020 strategy calls for tourism innovation in order to improve the quality of food in all its aspects, improve professional skills in the industry, overcome the seasonal nature of demand, diversify the tourist product, which will provide improved statistics and analysis in the field of tourism, addressing social problems [1].

In the tourism industry, innovation activity develops in three main areas:

1. Implementation of innovations (organizational innovations) that are related to the development of entrepreneurship and tourism business in the system and management structure, including reorganization, absorption of competing subjects on the basis of new technology and advanced technologies, personnel policy, rational economic and financial activities;

2. Marketing innovations that can meet the needs of target customers, or attract new customers;

3. Periodic innovations (product innovations) aimed at changing the consumer qualities of a tourism product, its positioning on the market.

Today, the most important characteristic of innovation is its novelty, which promotes the expansion of the range of potential consumers (tourists), changing the needs of customers and expanding the function of tourist products. To innovation in tourism should be attributed primarily those innovations that are accompanied by:

- the restoration and development of the spiritual and physical forces of tourists;
- qualitatively new changes in tourist products;
- increasing the efficiency of tourism infrastructure;
- increase in the efficiency of management of sustainable operation and development of tourism in the country;
- increasing the efficiency of the processes of formation, positioning and consumption of tourist services;
- progressive changes in the factors of production;
- increase of the image and competitiveness of the enterprises of the tourist industry.

The world and Ukrainian experience of business entities in crisis conditions convinces that innovations, together with skillful use of existing potential, rational organization and management, play a decisive role in ensuring their financial stability. Innovation in tourism companies is not only a key to ensuring their competitive advantages. This is primarily a factor in ensuring their financial stability in the current and long-term in a rapidly changing economic environment. In order to achieve the most effective result, innovations should be non-local, but complex-system character, covering the organization of

production and realization of tourist services, as well as management of its information flows, finances, provision of personnel, integration relations with business contractors, etc.

The majority of developed countries in the market of tourist services is an example of how their enterprises carry out innovative policies, providing a stable increase in labor productivity, production and sales of tourism products, profits, accelerating the turnover of invested capital, mastering and supplying to the market qualitatively new types of products and services.

The tourism industry, which combines the activities of travel agencies, hotels, food and trade enterprises, the construction of tourist facilities, transport, training institutions, etc., is currently one of the largest, highly efficient, highly profitable and most dynamic sectors of the world economy, which is one of the first places in terms of scale and turnover of cash flows.

About 1.2 billion tourists around the world travel every year. The main trends of the world tourism market development are the lack of borders for travelers, the growth of the number of tourists at the expense of people of ages, the significant impact of new technologies and the stability in a period of crisis.

According to experts from the WTO, the number of travelers in the world by 2020 will reach 1.6 billion people per year, which means an increase in tourist arrivals by 2.4 times compared to 2000. At the same time, revenues from tourism, according to the forecasts of the WTO, in 2016 will amount to 1550 billion US dollars, that is 3.3 times exceeds the level of 2000, and by 2020, the increase in revenues is expected to reach 2000 billion US dollars.

Thus, with an annual increase of 8%, the number of tourism revenues in China will reach $ 137.1 million by 2020. The second most popular tourist destination will be the United States (102.4 million), followed by France (93.3 million), Spain (71.0 million), Hong Kong (59.3 million).

The daily expenses of tourists, with the exception of funds for air travel, will increase to 5 billion dollars per day. According to the forecasts of the WTO, the rapid development of outbound tourism is expected. Germany, Japan, the United States, China, and Great Britain will become the largest supplier countries for tourist flows. The economic backwardness of Eastern European countries is a real

obstacle to attracting the population of these countries to international tourism. The volume of tourism between the countries of Western and Eastern Europe will grow mainly in the direction from East to West.

Specialists of the World Tourism Organization identified the five most promising types of tourism in the XXI century:

1. Cruises - one of the most promising types of tourism, which is now rapidly developing. In the beginning of 1980, the number of "cruise" tourists was 1.5 million people, now - 10 million, and their number is constantly increasing.

2. Adventure tourism - for fans of acute sensations. The demand for climbing to the highest peaks of the world and excursions to the deep sea is constantly increasing. It is expected that in 2017 the thirst for adventure like never before will push people to new achievements. 56% of travelers would like to be more independent on trips next year. This trend is particularly typical for tourists from Brazil, India, the USA, China and Thailand. Among the main destinations where "seekers of adventure" would go from Russia and Ukraine - Italy, Sri Lanka, Liechtenstein, Greece and Thailand.

3. Cultural and cognitive tourism - will actively develop in Europe, Asia, the Middle East, respectively, will increase the importance of protecting cultural monuments.

4. Business tourism - has entered the phase of active development at the present time and will develop in the future, which is associated with the rapid pace of development of the world economy, the deepening of political and economic ties between different countries of the world.

5. Space tourism - according to American experts, will provide an annual income of $ 10 billion. A significant number of travelers are beginning to think about traveling beyond our planet. 44% of the respondents (data collected by Booking.com in March 2016 in 10 countries, each of which interviewed 1,000 respondents) dream of the time when the holidays can be held in the far corners of the galaxy or at the bottom of the ocean. Probably, flights into space - it's a little more distant prospect, in the view of immersion in the dark ocean depths is quite real, it can become a platform for innovative solutions in the field of tourism.

With the increase in the number of travelers, tourism infrastructure is noticeably developing and its main element - the hotel sector, which took different forms in the past centuries, namely: from family

ownership to participation in international hotel chains. The hotel network helps to promote the world tourism market of high standards of service, promotes support of hotel service of tourists, expansion and noticeable increase of level of hotel service.

Today, the processes of globalization and transnationalization of the world economy are gaining momentum, the system of interconnections and the interdependence of national economies are directly reflected in the tendencies of the development of the world hospitality industry, namely:

1) The expansion of the sphere of interests of the hotel business in the products and services that were previously offered by enterprises of other industries involved in catering, leisure, entertainment, exhibition activities, etc. Such segments of the hospitality industry as the entertainment industry, which includes gambling business, theme parks, congress activities, make previously uninteresting resort and tourist areas the most popular destinations for tourists. For example, such large corporations as Marriott International and Holiday Inn, significantly expanded the company's function as a result of providing various types of services (catering, communications, leisure, transport, etc.).

2) The growing democratization of the hotel industry, which greatly improves the accessibility of hotel services to numerous clients. The development of budget airlines and electronic booking sites has all made travel more attractive to a large number of people.

3) Expanding the specialization of the hotel business enables to more precisely identify certain segments of consumers, taking into account different features: the purpose of the trip, age, direction of work, etc. In taking into account the price level there are clearly three segments: lower (budget), average (economic) and higher (lux).

4) Formation of new types of tourism. Ecological tourism, the main idea of which is the deep connection of the person with the surrounding nature, stimulates the construction of hotels in environmentally friendly regions, requires the creation of "green" floors and rooms in small hotels. These rooms will be equipped with environmentally friendly materials, focusing on the conservation of natural resources and minimal interference with the natural environment.

5) The globalization and concentration of hotel business is manifested in the creation of large corporations and hotel chains. Hotel

companies are grouped together through the creation of networks or associations, while their legal and economic activities are not violated, however, it is allowed to conduct joint marketing programs and research activities, to form a unified system of training and retraining of personnel, to find the necessary sources for improving their own business.

6) The deep personalization of the service and the full concentration on the requests and needs of customers is to create a permanent customer card, which reflects all the information about the client: the taste, benefits and habits, which allows you to discourage customers' desires. For this purpose separate special services are allocated in hotels. Yes, a special butler service was created at hotels of Marriott International Corporation. The Corporate Training Program "Yes I Can!" Is being implemented at the Redisson hotels, which is aimed at creating its own interest in the entire team of the company to provide services to clients only on "excellent".

7) Mass implementation of the latest communications and information technologies that allow deep and systematic economic diagnostics. The final result of the diagnostics allows for full self-analysis and analysis of competitors in the direction of applying price and marketing strategies, determining the degree of activity on the market, identifying the profitability of target segments, coordinating demand and hotel service offerings. All this helps in solving the problems associated with the loading of hotel enterprises.

8) Implementation of the latest technologies in the business strategy of hotel enterprises with widespread use of the Internet to ensure the effective promotion of hotel products and services. So, the use of new booking systems provides unquestionable competitive advantages. Due to the introduction of new innovative technologies, visiting the site of the hotel, the client sees the interior, studying the menu, obtaining the necessary background information. Consumers of the "Millennium Generation" hotel services are becoming more "technically savvy", and as a consequence, a fast, customer-oriented service is becoming more and more in demand, forcing website owners to look for innovative ways of development, more often turn to analytics services, expand existing markets, and look for new development vectors.

Consequently, the above main current trends in the hospitality industry are ultimately aimed at solving the main tasks: finding their

own competitive advantages; the ability to create a permanent client, due to the ability to find your target customer; identify new ways to develop their own policies, taking into account the dynamic development of the hotel and tourist services market.

In order to meet the expectations of the most demanding tourists and keep their positions in the face of fierce market competition, the traditional hotel product is actively developing today, offering customers the latest technological innovations, better value for money and more comfortable living conditions.

New innovative technologies and mobile hotel services are now designed to predict demand by offering consumers what they have never booked before. Clients of hotels around the world have the opportunity to get full control over their number using a smartphone, smart clocks or other devices. For example, a smartphone is now used as an electronic key which the visitor can use to adjust lighting, music or orders food and drinks, music or orders food and drinks. Recently the Hilton Worldwide launched the Digital Key program, which allows you to register at the entrance to the hotel, select a room in the appropriate category and access the room - all with the help of a program for the smartphone. But some companies go even further: in California, one of the Aloft hotels (brand Starwood Hotels & Resorts) has a robot-butler. New innovative technologies help hotels meet the demands of customers in terms of mobility, availability of services and flexibility.

The main thing in traveling is getting unique impressions - as a result, lifestyle-hotels are doing their best to give their customers the chance to experience a new experience different from the rest. This trend has spread throughout the industry: starting with design hotels (the pioneers on this market were Missoni and Armani, Gucci and others have picked up the trend now) and ending with a segment of hostels (trendy, conceptual hostels are also trying to offer unique features to customers with a small budget). International networks in some regions make a departure from standardized products and add national coloring or other interesting features to their homes to give their clients a unique experience of staying in a country or city. A prerequisite for success for both new and existing hotels is the offer of a better value for money. Now premium hotels are becoming more luxurious, while budget and economy hotels improve the quality of the offered minimal services.

Along with traditional full-service hotels, recently there are specialized hotels with a reduced set of services offered. They are aimed at serving a certain segment of the tourist market: for example, for tourists who come to congresses, exhibitions, fairs, golf, skiing, horseback riding, etc.

A new trend in the development of the placement sector is the construction of rather unusual and extravagant hotels of the world, to provoke curiosity and the desire to experience unusual feelings on their own experience. Such hotels are located in incredible places and conditions: in ancient castles, monasteries and cathedrals; in barrels, such as Diogenes' housing (Germany, the Netherlands); in underground bunkers; in former prisons; on the roof of the museum (France); in the snowy houses-Igloo and houses completely built from the ice; in the Indian Wigwam (USA, Canada, Bolivia, Venezuela, Costa Rica); in caves, in hollows and houses on trees, under water and in houses of rock salt (Bolivia); in fortresses, windmills, lighthouses; in a toilet-house (South Korea); on a schooner frozen in the ice behind the Arctic Circle (Norway); in helicopters (Sweden, USA); in trains.

One of the most famous hotels, created under the sign of "strangenesses", is the Dog Bark Park Inn, opened in 1997 in Cottonwood, USA, Idaho, 5 km from The Monastery of St. Gertrude & Historical Museum. The house is made in the form of a dog, and the rooms have two floors. In the dog's face there is a small bedroom, which, according to visitors, there is a very good sleep. For guests there are various workshops for bread baking, cooking, improving your photographing skills and even drawing up a business plan.

Hotel The Giraffe Manor is distinguished by the unity of nature and man, a typical example of English architecture, located in the suburbs of the Kenyan capital of Nairobi on the shelter for giraffes. This is the only place in the world where you can enjoy the fascinating feeding and photographing of giraffe who have breakfast at the table. The real challenge to the standards is the Huvafen Fushi (Dream Island), opened in 2004 on the island of Nakachafushi (Maldives). This is the world's first hotel, part of which is located under water, an underwater spa resort featuring comfortable beach bungalows and bungalows, located on the beach. Each house, which combines the minimalist and exotic style of the Maldives, is equipped with modern technology, has its own freshwater pool; some houses have private beaches [2].

In general, these and other examples show that the fantasy of the creators of the most diverse and strange hotels is boundless to attract tourists.

These trends encourage participants in the hotel services market to optimize all aspects of their business in search of operational and financial sustainability, stimulate them to introduce new opportunities for growth and access to capital markets on more favorable terms. Due to this, in recent years there has been a significant increase in mergers and acquisitions, expansion of spheres of activity and influence of global companies and global brands. The processes of integration and transnationalization are the result of the activity of international hotel chains, that is, transnational campaigns [3].

Thus, the dictionary of travel, tourism and the hospitality industry defines the term "international hotel network" as a collection of individual entities such as a hotel, restaurant, shop that is part of a group or similar structure, are under the sole control and located in more than one country [4] At the same time, in the terminology of the United Nations Conference on Trade and Development (UNCTAD), transnational corporations (TNCs) are united or independent enterprises that consist of a parent company and its foreign affiliates. The parent company manages the shares of these companies [5]. Consequently, the characteristic features of TNCs are an international approach to the organization of production, financial policy, as well as a combination of centralized management with varying degrees of autonomy of the structures that are part of it. Due to the fact that in the hotel market, international networks have these characteristics, these structures today represent the sector of the international hotel industry.

Although the European chain Cesar Ritz is considered the first hotel chain in the world, the process of creating network links in the USA was the fastest. At present, hotel chains are available in many countries around the world: USA - Best Western International, Choice International, Holiday Hospitality, Marriott Hotels, ITT Sheraton; France - Accor, Club Mediterrance; United Kingdom - Forte Hotels, Hilton International; Spain - Sol-Melia; Hong Kong - New World Renaissance, Shangri-La, Mandarin Oriental; Japan - Prince Hotels, Tokyo Hotel Group; PAP - Protra Hotels and Inns, Karos Hotels; Ethiopia - National Hotels Corporation; Mexico - Grupo Posadas de Mexico, Grapo Situr; Cuba - Cubatur; Brazil - Othon Hotels.

In the world there are more than 16 million hotels, of which every 4th belongs to a certain network. Top 10 most famous hotel giants are: Intercontinental Hotels Group (IHG), Hilton Worldwide, Marriott International, Wyndham Hotel Group, Accor Group, Choice Hotels International, Starwood Hotels and Resorts, Best Western, Home Inns (+ Motel 168), Carlson Rezidor Hotel Group More than 1/4 of all hotel rooms have marks of 50 leading global companies.

In addition, in today's highly competitive real estate market, more and more passive investors (investment funds, investment institutions, etc.) tend to diversify. Investment intermediaries gradually increase portfolios and expand the coverage of the global market, including through the purchase of international hotel chains, thus indirectly becoming part of the industry. In 2014, 26% of hotels in developed countries belonged to open-end investment funds, 16% to investment companies managing real estate, and 8% to institutional investors. In this case, operators controlled 33% of hotels. In total, passive investors owned 50% of facilities in developed countries, making them the largest owners in this sector. Despite the fact that in developing countries, their share - 16%, experts predict the strengthening of their role on a global scale.

On this, managing assets in different countries, investment intermediaries also represent a TNC segment in the hotel business. Thus, in the framework of the study to the multinational corporation of the world hotel industry, we include both international hotel chains and investment intermediaries with foreign assets in the market of hotel services.

It should also be noted that today in the international tourism industry the processes of consolidation are greatly enhanced. The market is gradually reducing the number of individual hotels that are part of national and international networks. According to analysts of JLL's Hotels & Hospitality Group, in 2014, the value of all M & A in the global hotel services market amounted to $ 59.1 billion, which is a quarter more than in 2013.

In November 2015, the American company Marriott International, one of the world's industry leaders, announced the takeover of Starwood Hotels & Resorts, and in December 2015 it became known that the French hotel operator Accor Hotels intends to acquire a full stake in the holding FRHI, among other things, is the famous Raffles hotel in

Singapore. In the young countries of Southeast Asia, where the pace of urbanization is increasing, the demand for travel services is growing. In response, the major hotel owners are implementing a brand extension strategy and are striving to meet growing demand by increasing the number of group members and customer retention. Thus, Marriott has become a giant enterprise with 75 million participants, the number of hotels has reached 5500, and the total number of rooms is already 1.1 million rooms.

The growth rate in 2015 was at least 15%, which allowed reaching the pre-crisis figure of 2008 at 68 billion dollars. and to approach the highest for the current century figure of concluded financial agreements of 2007 - 113 billion dollars. The annual growth of M & A in the hotel industry since 2009 is an average of 17%. At the same time, in 2014 the dominance of cross-border capital movements increased significantly, amounting to 41.2% of global investment in hotel facilities, compared with 34.7% in 2013. At the same time, the influence of investors from developing countries, first of all - Asian, - China, Hong Kong, Japan, Singapore - is increasing, which in 2014 carried out 43.2% of inter-country transactions. Investments from these regions were mainly directed to Australia (57%), Europe (15%) and North America (6%).

In general, among the advantages of joining smaller tourist-hotel enterprises to transnational corporations operating in the sphere of hotel business can be distinguished:

- increasing brand recognition;
- security (tourists prefer to stay in hotels of well-known brands in "dangerous" countries);
- availability of global booking systems;
- integrated marketing (allows you to reduce the costs of promoting the brand due to the presence of the company on the operator's site, in booking systems, brochures);
- loyalty programs (guests who have become members of the hotel loyalty program of this brand have an incentive to stay in hotel hotels in another country);
- quality of services (unification of service standards, management systems, personnel training);

- stability during periods of crisis (more stable demand from regular customers, efficient management, loading due to presence in global booking systems);
- the possibility of using the so-called "multi-segmentation" (when within the network there are hotels of different categories, oriented to different segments of the market);
- lower costs (network hotels reduce costs for material costs, engineering services, advertising, marketing at the expense of large volumes of procurement and distribution of costs among the "links" of the network);
- reduction of investment risks (the international brand reduces risks and creates an advantage in attracting investments and bank loans).

Thus, international networks are promising and rapidly developing TNCs that contribute to the development of the world economy. Developing in parallel with the global processes of globalization and transnationalization, they are resistant to crisis processes, are drivers of growth and modernization of the tourist and hotel industry. International hotel complexes have great potential for attracting capital, through which they are continuously expanding to cover all new markets.

Currently, the world's largest ever-growing hotel chains are obliged to introduce Revenue management to increase profitability of the company along with expanding activities and aim at achieving the maximum RevPAR (Revenue per available room, profitability level of one hotel room). In the conditions of monetary stimulation from the management of hotels, it is necessary to ensure a high level of load and profitability.

In turn, informatization, which has become another global trend in the hotel business, leads to the development of a variety of sales channels, such as direct sales sites of hotels, online travel agencies (OTA) and others. This is due to the active participation of companies in other areas of activity - Google, Facebook, etc.

It should also be noted the significant expansion of international hotel operators in Russia, the CIS and Georgia. At present, there are approximately 200 hotels in the whole region, and in the CIS countries (excluding Russia) - 70. In 2015, the market for branded hotels in Russia, CIS countries and Georgia has increased by 6 thousand rooms, of which just over half - 3.3 thousand numbers - came to Russia. Azerbaijan (the three objects under the control of international operators

with the total number of rooms are slightly less than 1.2 thousand rooms), the third one - Kazakhstan (three objects aggregate for 569 rooms), the fourth in the fourth place - Georgia (three objects are aggregated on 463 numbers).

According to information received from international hotel chains, even taking into account the uncertainty of economic growth in some countries, it is expected that by the year 2020, 194 hotels with a total number of 37300 rooms will open in the region (59 hotels per 10,400 rooms in the CIS, not taking into account Russia) (Fig. 21.1).

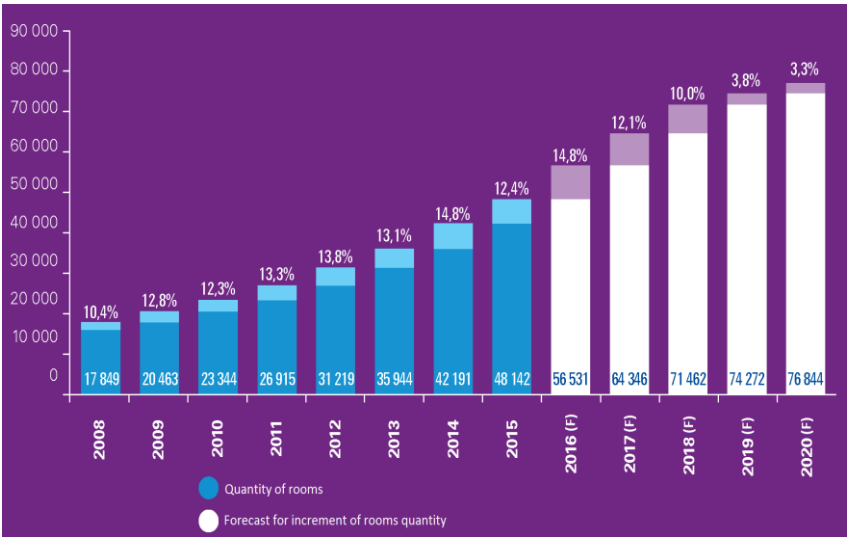

Fig. 21.1. Dynamics of change and the forecast of development of quantity of rooms in hotels of well-known international brands (CIS countries and Georgia)

Source: compiled by the author.

The Carlson Rezidor Hotel Group, which has more than 11,000 rooms in 44 hotels (34 of them in Russia), still holds the leading position in this region. AccorHotels has strengthened its position by bringing to market 1,500 new rooms in 2015, and now it ranks second (33 hotels, including 29 of them in Russia). According to the company's plans for development, by the year 2020 AccorHotels will become a market leader: for five years the portfolio of the group in the region will increase by 50 new hotels.

The degree of concentration of hotel chains in Russia and other CIS countries is different: in the Russian market, 76% of the room is distributed among the five leading players: Rezidor, Accor, Marriott, InterContinental and Hilton (Fig. 21.2).

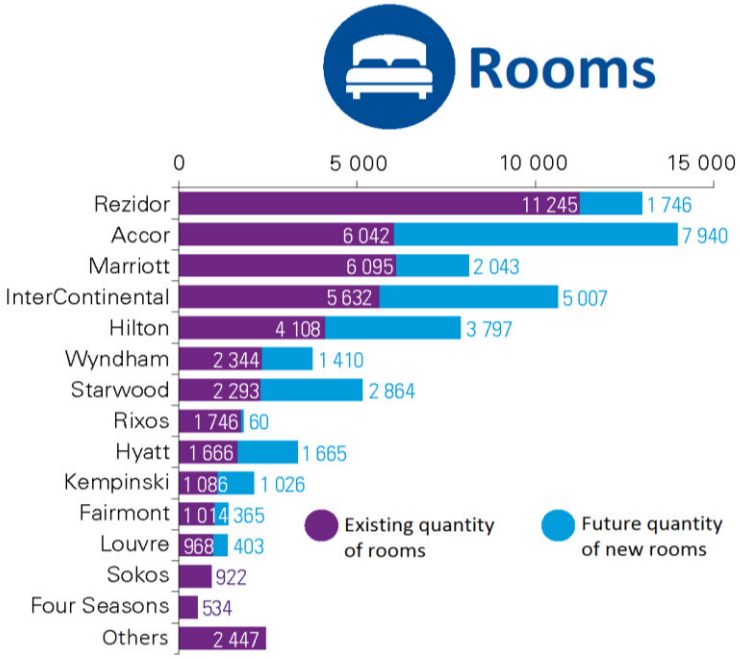

Fig. 21.2. Distribution of quantity of rooms of hotel chains of the CIS and Georgia

Source: compiled by the author.

In the CIS countries (except Russia), Rezidor and Marriott are in the lead, while Accor owns a smaller share, with Rixos, Hyatt, Wyndham and Starwood (Fig. 21.3).

Each country has its own leader in terms of branded room stock: strong positions in Azerbaijan are Wyndham and Rixos, the first place in Kazakhstan is Marriot, and the largest quantity of rooms in Ukraine - in Rezidor.

In an unstable economic situation in Russia and the CIS, most market participants are reviewing their plans for the future, given

the difficulty of attracting funding. But despite this, hotel chains are still ready to enter new markets in the region. In Russia, the most attractive are cities with a population of 300 000 people, as well as the Far Eastern region. International hotel chains from all CIS countries (with the exception of Russia) traditionally pay the greatest attention to Kazakhstan, as well as Georgia, where the tourism market is experiencing rapid growth. At the same time, the number of hotel construction projects in Belarus is increasing significantly due to the improvement of the investment climate in this country and the development of gambling business here.

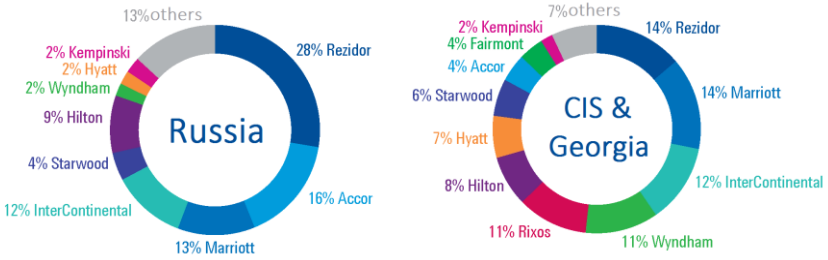

Fig. 21.3. Distribution of the numbers of hotel rooms of Russia, CIS countries and Georgia

Source: compiled by the author.

Russia is the largest market in the CIS, with 151 hotels operating under international brands, with a total quantity of rooms about 33,000. In 2015 the amount of rooms increased by 11% (3 600 rooms in 22 facilities). The most developed markets are Moscow, St. Petersburg and Sochi: they account for 70% of all international hotels in Russia.

The growth rate of supply in these cities has slowed down slightly: in 2015, only three new hotels with 765 rooms were opened in Moscow, while new hotels in international brands were not opened in St. Petersburg and Sochi. Moscow hotels continue to feel the consequences of the sanctions imposed by the EU and the US and the unstable macroeconomic situation: the flow of tourists from these regions has decreased by 5-15%. However, this decline was to some extent offset by an increase in the flow of local tourists in 2014 by 6% compared with 2013, as well as an increasing number of tourists from China.

In terms of the development of the market for hotel services in the CIS (without Russia) can be divided into two large groups. The first group includes Kazakhstan, Azerbaijan and Ukraine (as well as Georgia, which is not part of the CIS). 84% of the hotel rooms of the international hotel chain are located in these four countries, while branded hotels are located both in metropolitan cities and in the regions. Brands present here tend to cover all segments - from economy-class hotels and middle-priced to premium-class hotels, with the announcement of a large number of new projects in major tourist destinations and in major business centers.

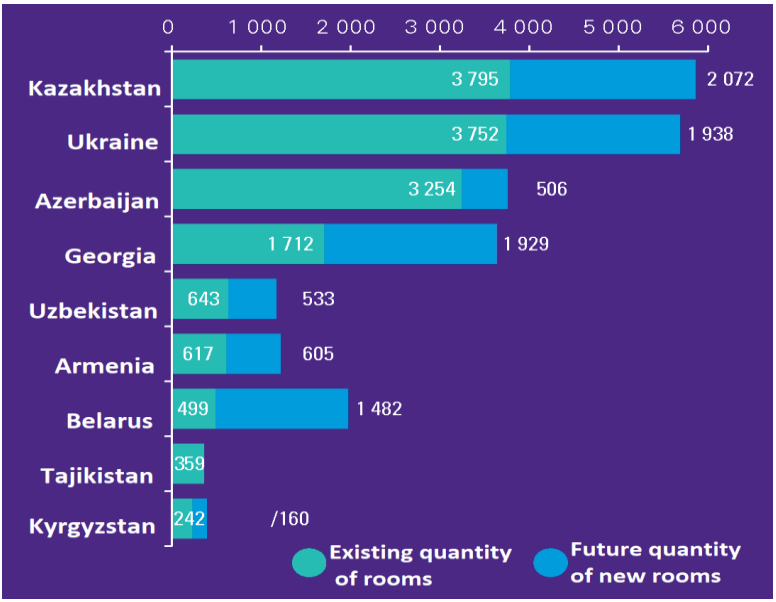

Fig. 21.4. Distribution of branded hotel rooms across the CIS countries (except Russia) and Georgia

Source: compiled by the author.

The other group of countries includes Armenia, Belarus, Kyrgyzstan, Tajikistan and Uzbekistan. The market for hotel services in these countries is less developed, and branded hotels are usually located in the capitals and are positioned mainly in the upper price category. In 2015, these countries did not undergo any significant changes, except

for Wyndham hotels in Tashkent (Uzbekistan), Hyatt Place in Jermuk (Armenia) and Hilton in Minsk (Belarus) (Fig. 21.5).

The hotel market in Ukraine is experiencing a difficult period due to the current geopolitical and economic situation. The influx of tourists significantly decreased, which led to a drop in the level of occupancy of hotels in Kiev to 40%. Under the prevailing conditions, the western part of the country is considered to be the most attractive for the further development of the hotel sector. In 2014, 1.7 million tourists visited Lviv, after this city became much cheaper to visit as a result of the devaluation of the national currency. The leader of the market is Rezidor, which owns more than 800 rooms in four hotels. 12 new projects are planned, but their implementation will be postponed due to the current situation on the market.

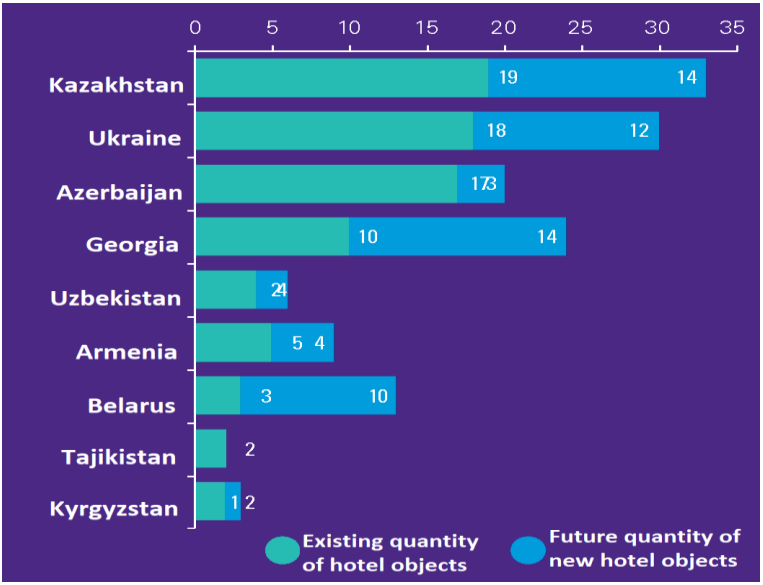

Fig. 21.5. Distribution of hotel facilities under international brands by CIS countries (except Russia) and Georgia

Source: compiled by the author.

The unstable political and economic situation in Ukraine forces to fight for every guest also Ukrainian hotels. One of the main tools for keeping and attracting new customers is the application of an individual

approach. Hotels introduce loyalty programs, develop unusual special offers, exhibitions, festivals, master classes and more. In difficult conditions of work for attraction of visitors the hotel arranges various actions and provide discounts, such as "third night as a gift", free early check in/ late departure / transfer / breakfast, significant discounts for advance booking, etc.

However, despite the efforts of individual institutions, the difficult economic situation and the war in the east of the state remain the main resultant factors for the Ukrainian hotel market. And although in 2015 there was a gradual restoration of business activity, the average occupancy rate of hotels remains low. The negative impact on hotel business is due to the fact that in global booking systems Ukraine is listed as a country whose visit is not recommended in terms of security; Similar information is also available on the embassies' websites of some countries. It should be noted that during 2014-2015, the number of foreign tourists in Ukraine decreased by half, reaching 13 million in 2015, which is primarily due to the tense political situation in the country and the uncertainty of foreigners in the security of their stay in Ukraine [6] .

Hotel performance indicators reflect the situation in the country. As part of the offer of hotel services, the most developed in Ukraine market is the capital of the country - Kiev. There are approximately 110 hotels, including 10 hotels under the international brands (Hyatt, Hilton, Intercontinental, Fairmont, two Radisson Blu hotels, Holiday Inn, Ramada, Ibis and Kosmopolit, operated by Warwick International). The amount of rooms of international networks in Kiev totals more than 2340, that is, almost 68% of the total network market in the country. Operators such as Accor Hotels, Intercontinental Hotel Group and Carlson Rezidor Hotel Group, represented in Kiev by one or two hotels, plan to expand further in the capital. In the near future, the capital market plans to go Marriott International Inc. and Starwood Hotels & Resorts with Renaissance hotels (173 rooms), Sheraton (196 rooms) and Aloft (320 rooms). Operators were still considering the capital market for doing business, but mostly in the long run.

It is worth noting that the attention of international operators and investors is also concentrated on regional cities. Starwood Hotels & Resorts was the first to enter the regional market of Ukraine in 2011 with the hotel Four Points by Sheraton in Zaporozhye. In 2014,

the network opened another hotel under the brand Luxury Collection in Odessa (Hotel Bristol for 112 rooms). Carlson Rezidor Hotel Group has one active hotel in Donetsk (Park Inn for 171 rooms). Accor plans to enter the Odesa market in 2017 with Novotel Hotel (170 rooms). In the resort towns of Bukovel and Truskavets, one hotel in the international network, with a total amount of rooms - 600.

Exploring the current state of the Ukrainian market, we note that the greatest problem for a number of Ukrainian enterprises is the complexity of introducing innovations, primarily because of the technological backwardness and growing cost-effectiveness of management. The physical and moral depreciation of their material and technical resources reaches at least 60-70% [7].

There is also a demotivation of workers - often effective innovations are initiated through direct policy guidance, as they lead to a reduction in staffing in certain structural subdivisions of hotels. At the same time, competitiveness, financial stability and profitability of the enterprise can be ensured only at the expense of reasonable selection and effective promotion of innovation changes.

Consequently, Ukrainian hospitality businesses should raise their level of innovation: to offer rooms with complementary services, to create landscape projects, to apply unique design solutions for hotel areas, to actively use modern communications technologies [8]. It is innovative solutions that allow business enterprises to obtain a financial effect and increase financial stability.

The forecast for the world hotel industry for 2017 is as follows. In the territory of the entire globe in 2017, plans to open more than two thousand new hotels (data "Tophotelprojects"), the largest of the construction of hotels will be two Asian countries: China and Asia, which were leaders in 2016.

In recent years, the number of new accommodation facilities in Europe has gone down, and Europe is beginning to give way to Southeast Asia by the number of new hotels. However, in 2017, new hotels will be built in Italy, Holland and the UK and the trend will change. It is planned to open 730 new accommodation facilities in Europe, including 235 units in Germany. In the United States, the leader will open 632 hotels. The total number of facilities for the North American continent and the Caribbean will be 733 units. In some Arab countries, new hotels will also be opened: Dubai has three high-class

hotels, and the Middle East region has 262 properties. According to Tophotelprojects, in the Asian countries, on average, about one hundred hotels will be opened monthly. In total, the Asian region in 2017 is expected to open 899 hotel facilities, 231 of which will be launched in China, and 103 hotels in India. It was announced that in 2017 will be opened only 144 new hotels on the African continent.

In the next few years, the number of tourists from developing countries should increase, while simultaneously reducing the flow of tourists from the EU and the US due to a difficult geopolitical situation. According to the World Tourism Organization, the volume of tourist spending from Saudi Arabia, India, Taiwan, the Philippines, Qatar, Thailand and Colombia abroad in recent years has shown significant growth. To succeed, hotels need to take into account the needs of clients from different cultures of the world.

Apart from the allocation of countries that provide tourists, it should be noted that the category of older tourists (over the age of 60) also increases the market share and increases purchasing power - thus, hotels should think about adapting their product in order to actively involve this group.

In this context, it is important for management to study how the market environment and response to its changes, and the modernization of the hotel itself and the expansion and diversification of all the services offered by it. From effective management depends on the use of innovative methods in the work of the institution, and the selection and continuous improvement of personnel qualifications is the basis for meeting the requirements of even the most demanding clients. The goal of all, whether operating or newly created hotel is to attract customers and receive due to this profit. To achieve this goal is influenced by many factors, among which today the unique idea about the type of object, the focus on the unfilled segment of the market, as well as the provision of the lowest and, above all, competitive prices in the appropriate with category of hotels in the hotel industry, can become a decisive one today.

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CHAPTER 22

FINANCIAL FACTORS OF INNOVATIVE DEVELOPMENT OF FOREIGN TRADE

Oksana A. Turpetko

In today's world, the world cannot alone master all the latest advances in scientific and technological progress and, thus, meet the requirements of world socio-economic progress. In this regard, the economic development of each country is closely linked with the acceptance of participation in international financial relations, which are an integral part and one of the most important areas of the market economy. They focus on the problems of the national and world economy, the development of which is historically parallel, closely intertwined. International flows of goods, services, capital, and loans depend on the degree of internationalization of economic ties. Foreign economic relations cannot be imagined without a well-established system of financial relations. In a specific form, these relations implement the requirements of the laws of monetary circulation, operating within the country.

The economic literature substantiates enough definitions of world financial relations, or, as some economists believe, related to the international monetary - credit operations, or monetary - financial relations. In my opinion, a clear definition of the concept of international financial relations is sufficiently substantiated: the international financial relations are a systematic formation that is the result of international economic relations, the international division of labor, international cooperation of production, the expansion of integration processes in all spheres of social production on micro, meso, macro, meta and mega levels. Considering the essence of world financial relations, Rumyantsev A. P. notes that "the genesis of international financial relations is based and is the result of the evolution of international monetary, credit, settlement relations". In modern conditions, they are closely intertwined and acquire the features of a holistic phenomenon, which is inherent in the qualities of system education, and which in this aspect synthesizes the deep essence of international financial relations. With this combination of international

currency, credit and settlement relations do not lose their essential features and become the main components of the system of international financial relations [8, p.5-8]. The world financial system can historically be considered the highest level of functioning of world financial relations. This approach is important for a further research of the global financial system.

In the economic literature, there is no single approach to the definition of the concept of "world financial system". This is due to the fact that researchers treat it according to the institutional components that, in their view, have the greatest influence on the formation of world finances. Thus, some Russian scientists are investigating the structure of the world financial system through the prism of institutions that are involved in the displacement of world financial resources. In particular, this position is reflected in the scientific works Movsesyana A. G. and Ognivtseva S. B. [4]. However, in accordance with such an interpretation of the structural elements of this phenomenon, the world financial system, in my opinion, is considered in the narrow sense. In broad terms, this is an organic set of financial systems of individual national economies, within which each state produces and implements financial policies, through its own financial mechanism. The relationship between national and international (like the "eurozone") financial systems have demonstrated the global financial crisis, which led to an internal crisis in the American financial system.

It is worth mentioning the definition of the world financial system of Ukrainian scientist Lutsyshyn Z. O.: "Financial elements of the system are international financial markets and the mechanism of trade in specific financial instruments - currency, securities, and loans. An independent element of the international financial system is international settlements, which serve as a movement of goods and factors of production, as well as financial instruments "[3]. In today's diversification of the global financial system, this concept is more multifaceted and is often used in various fields of activity. Thus, the definition of Russian scientists in the field of international economic law deserves attention. Moiseev O. O. considers the international financial system as an extensive scheme with a large number of state and private-credit elements, through which coordination of financial ties in the world is carried out [5]. Another Russian scientist,

Shumilov V. M. notes that the international financial system is a sphere of cross-border transfer of financial resources. He highlights the international financial system as a subsystem of the general and wider international economic system. In the context of the question of the content and structuring of the world financial system, Ukrainian scholars Kozak Y. G., Logvinova N. S., Kovalevsky V. V., define: "the set of financial markets and financial institutions (institutions) operating in the legal and tax environment international business, create a global financial system "[2, p.489].

The analysis of the above approaches to the definition of economic content, the essential features, structure, and world financial system can be considered as a holistic entity, which consists of separate elements interconnected, and covers the whole set of international financial relations. Specifying this provision it should be noted that the world financial system functions as a set of international monetary, credit and settlement relations, interconnected by the interaction of world financial markets, international financial institutions (transnational corporations, transnational banks, international financial organizations, international currency, stock exchanges), interdependent in a certain order through the global financial flows. These essential components of world financial system are due to the process of its intensive diversification during the deployment of globalization processes in the global economy. From our point of view, the structural diversification of the world financial system can be considered based on functional, institutional and territorial criteria.

Diversification of the structure of the global financial system can be identified in three directions. Relying on the territorial factor of structuring, and in accordance with the evolution of the financial system, the following concepts can be distinguished: national, regional, international, world, global financial system. Historically, the first emerged and laid the foundation for further development of the national financial system. In general, it is an organic set of principles, forms, methods, and organizational instruments, value levers used to regulate currency, credit, and settlement and operate in order to regulate and develop within a single country of the world. Somewhat broader to date is the definition of the regional financial system, as it includes the whole set of measures for the organization, regulation and optimal development of currency, credit, settlement relationships within

the integration groupings (for example, the European Monetary Union). In our view, the international financial system, unlike the world, which operates on the basis of multilateral relations, is a harmonious combination of financial relations on a bilateral basis (examples and methods of mutual settlements between Ukraine and the Russian Federation can serve as an example). The globalization process is a characteristic feature of the modern development of the world economy. It objectively covers national economies of all countries of the world and provides for the development of the formation of a global financial market that is just beginning to be born. The set of organizational, economic, cost principles, forms, methods, tools for its regulation and implementation will form the essence of the global financial system.

The functional structure of world financial system consists in the research of one of the important structural elements - the global financial market. In today's world, the global financial market can be defined as a system of market relations, which leads to the accumulation and redistribution of international financial flows. It should be noted that it is appropriate to consider it as a global mechanism that functions to balance the world's supply and demand for capital. According to other literary sources, it is a market for short-, medium- and long-term loans, investments, securities, deposits, etc., carried out internationally. The international financial market in international practice is divided into different sectors. However, this division is rather arbitrary, since some structural elements cannot be clearly defined. For example, the international property market is a structural element of the international securities market and one of the two major segments of the international capital market. Similarly, the international bond market is an integral part of the international debt market, but at the same time, according to other criteria, the international securities market.

The current International Monetary Market can be defined as a system of economic relations, connected with the operations of purchase-sale of foreign currency, currency values and the movement of foreign capital, based on the development and interconnection of national markets. To date, the largest regional currency markets have been formed: European (with centers in London, Frankfurt, Mauritius, Paris, Zurich); American (with centers in New York, Chicago, Los Angeles, Montreal); Asian (with centers in Tokyo, Hong Kong,

Singapore, Bahrain). Today's turnover in the three largest currency markets of the world (London, New York, Tokyo) is today more than 1.5 trillion dollars, and the annual volume in the world foreign exchange markets reach 250 trillion dollars, which increases annually by 10%.

Exploring the global currency market, it should be noted that the global financial crisis has led to a certain consensus on exhaustion of the opportunities for the effective development of the world monetary system as a structural element of world financial system based on the US dollar as the main settlement and payment instrument. In the near future, it is impossible to determine a currency that could be similar to a dollar. In the structure of the turnover of the world foreign exchange market, according to the data of the Bank of international settlements for transactions with the dollar is about 43%, in same time for USD / EUR 27% is required. In the currency structure of international reserves, the share of the US dollar accounts for 64%. However, this share tends to decline. This means that there are grounds for creating a "currency pool". They would be able to make the financial system more stable by introducing strong regional currencies.

In the future, such currency areas may include:

1) The ruble zone (Russia, the Union State of Russia and Belarus, the Eurasian Community (Eurasian Economic Community) and separate CIS countries);

2) Zone of Yuan or Yen (China, Japan, ASEAN countries and other countries of the Asia-Pacific region);

3) Currency area of the countries of Latin America based on the countries of MERCOSUR (Brazil, Argentina, Paraguay, Uruguay, Venezuela) and the countries of the Andean Group (Bolivia, Colombia, Peru, Venezuela, Ecuador);

4) "Golden dinar" zone - Arabian countries of the Near and Middle East and other Muslim states (approximately 55 member countries of the Islamic Development Bank) [11].

The advantages of creating currency zones are the emergence of regional reserve currencies, which can significantly increase the stability of the world financial system. The weakening of the US dollar as the main settlement currency will facilitate the transition in trade between countries in their national currencies.

One can distinguish the following trends of a transformation of modern world financial system:

- Return to the gold or gold exchange (gold standard) standard;
- Introduction of a mono-currency system based on the dollar;
- Further existence of a dollar-euro and bilateral dollar-based system;
- The establishment of a foreign exchange system based on a relatively large number of major reserve currencies;
- The formation of a system for the creation of a single world reserve currency on the basis of special drawing rights;
- Creation of a system based on regional currencies;
- A transition of the world financial system to a multi-product standard.

As a result of the study, some general approaches to the future reform of the current model of the international monetary system can be singled out. In particular: the creation of currency zones, subject to a further reduction of the dominant role of the US dollar; refusal to freely navigate national currencies; strengthening of collective measures of regulation of the world financial system.

The international securities market (stock market) is developing in the context of globalization. An important function of this institute or mechanism is to bring together buyers (demand representatives) and sellers (suppliers) of stock values, that is, securities. Depending on the nature of the attraction of financing, the international securities market consists of a market of debt securities (market of loan capital), a market of title titles, represented by international shares and other property rights, which are derivatives of shares by instruments, in particular, such as depositary receipts, as well as the international market of derivative financial instruments (derivatives).

The international market for derivative financial instruments is rapidly expanding and developing. This is a market for instruments trading financial risk, whose prices are tied to another financial or real asset (commodity prices, stock prices, exchange rate, and interest rate). In international practice, the most common types of derivatives are forward and futures contracts, options, and swap contracts. Foreign economists point out that the use of derivatives involves bankruptcies of a number of well-known banks and losses estimated at billions of US dollars. In some cases, losses arose within a very short period of time, as in Barings Bank, and in others - were the result of the application of

a false trading strategy for many years, as in the case of Sumitomo Corporation [1, p. 23].

The international money market is characterized by rapid development of processes of globalization, integration, and universalization, the spread of securitization (i.e., the replacement of traditional bank loans by issuing securities), as well as the provision of short-term loans mainly for the servicing of international trade. This led to the creation of a large mobile global money market, which gradually lost the former clearness of the distinction between its separate segments. Unlike the previous, long-term (maturing over one year) debt and equity shares are bought and sold on the international capital market. The most powerful capital market in the world is the United States with a center in New York. Today, all investment banks, such as Salomon Brothers, Merrill Lynch, Goldman Sachs, carry out financial transactions there. An important structural element is a constantly growing market, both at the national and international level, of debt obligations. Brazil, China, India, Korea, Malaysia, Mexico, Turkey and South Africa achieved the greatest progress in the development of the domestic borrowing market. Separating regional markets individually, it is necessary to pay attention to the international practice of their functioning. The largest international money market and capital market is the euro-market, or the Euro-dollar.

Under the conditions of globalization, the virtual financial market, which includes FOREX, is developing. Recently, another separate segment of the international financial market - the insurance services market, the services of which are relevant for today and closely intertwined with the services provided in the international market of derivative financial instruments - have begun to be allocated.

In general, the following trends observed in the global financial market should be highlighted:

1. Around the world's leading currencies currency blocks are created. An example is the dollar currency unit, which was created in 1933 from Latin American and Canadian dependent countries, and the currency unit of the euro, the creation of which is associated with the introduction in 1999 of the euro. There is also the probability of creating new currency blocks.

2. The concentration of international financial markets means the process of merging as creditor organizations (banks, investment

funds, insurance companies) and borrowing organizations (a transnational corporation, etc.). As a result, huge amounts of financial resources are concentrated in the hands of a limited number of global players who not only carry out operations in many segments of the debt capital market, but also act as "market makers" - determine the value of financial resources in the market based on their supply and demand. Processes of concentration have affected all developed countries of the world.

3. Internet technologies facilitate direct communication between investors and issuers, thus erasing national boundaries. As a result, the technical re-equipment of financial markets is underway.

4. In the global financial markets, 95% of all financial transactions come from speculative transactions. According to the UN, the international crime every year launders 600 billion dollars. In order to address the problem of money laundering, a special financial commission has been set up, consisting of 26 OECD member countries and several major international organizations, the FATF. The Commission issued 40 Recommendations to establish a general framework for combating money laundering.

5. Integration of international capital markets. The impetus to this process was the elimination of many barriers for the introduction of international lenders and borrowers into national capital markets, increasing debt mobility, reducing transaction costs, the rapid development of information systems (databases, global computer networks), etc. In recent years, one of the most important events in this area was the introduction of the euro. The emergence of a single European currency has changed the role of European financial markets in the global monetary and financial system.

6. In the currency structure of the financial market, the dollar prevails: the currency market is almost 90%; the stock market and bonds market is 45%. In the system of international foreign trade payments per dollar accounts for 70-80% of operations.

The research of the institutional structure of the global financial system should begin with the definition of the relationship with the functional. The global financial market forms the flow of financial flows (in cash, in the form of various types of financial and credit instruments) through transnational corporations, transnational banks, international stock exchanges, international financial auctions, and also

international financial institutions (IFIs). Developed and stable international financial institutions are a prerequisite for the functioning of the global financial system. IFIs are intergovernmental formations that perform functions to regulate relations in the field of international finance. Their overall goal is to develop cooperation, ensure the integrity and stability of credit and financial relations. Modern financial organizations have their own charter, their own organizational structure. They are characterized by certain loan conditions, membership, and a clearly defined goal. The main ones are the International Monetary Fund (IMF), the World Bank Group, and the Bank for International Settlements. The World Bank Group includes the International Bank for Reconstruction and Development (IBRD), the International Finance Corporation (IFC), the International Development Association (IDA), the Multilateral Investment Guarantee Agency (MIGA), the International Center for the Settlement of Investment Disputes (ICSIS).

Dividing international financial organizations into two groups: international funds and international banks, it must be realized that in today's conditions of development of the world financial system as a subgroup of regional banks. For example, regional banks within Western Europe, Latin America, Africa, South-East Asia and the CIS, which were created gradually, in accordance with certain stages of the evolution of world economic relations and the intensity of integration processes. Among them are the European Central Bank (ECB), the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank (ADB), the African Development Bank (ADB), the Inter-American Development Bank (MABR), the Islamic Development Bank (IBR), the Black Sea Trade and Development Bank (BSTDB).

In today's conditions of the global financial crisis, there is a need for a detailed analysis and reform of the system of international monetary and financial organizations. This is due to the fact that in recent years, their policies created preconditions for the emergence of financial and economic crises. Although at the theoretical level, their task is to help reduce the probability of emerging crises. For example, in the 1990s, they did not track the dramatic changes in the nature of financial and debt crises, during the crisis and the default in Argentina, the IMF

revealed its inability to provide effective recommendations and sufficient funds to overcome them.

In general, from our point of view, as a result of the collapse of the Bretton Woods system in 1973, the IMF has exhausted its function with the aim of creating it - to monitor and maintain a system of fixed exchange rates. To further its activities, it was decided to provide a new international economic consultant for countries with financial, political, and economic problems. It should be noted that this MFO did not assume the creditor's functions for member countries since they were performed by IBRD. However, after the collapse of the gold standard, the IMF, having lost its primary goal, began to gradually function as a development bank for poor countries, thus repeating the tasks that were set before the IBRD at creation. Although in 1995 there was a clarification of the scope of these institutions, according to which the IRF works with the governments of countries without lending specific programs (this function is performed by the IBRD), the question of their failure to maintain SPS stability remains unresolved, in our opinion.

This fact has once again confirmed the global financial crisis, the consequences of which Ukraine and other countries of the world now feel. In this situation, the IMF would have to assume the role of central authority for all countries that suffer from the consequences of the GFK, promptly lending and advising them. But this is impossible, i.e. he does not have sufficient funds and does not control national banking systems. And as George Soros put it: "To act in this role is the same as to sign a bearer's check without specifying the amount".

The current development of the global financial system is characterized by the intensification and internationalization of financial-economic and industrial ties, in which such organizational structures as transnational corporations and multinational banks play an important role.

Transnational corporations became the main subject of economic activity in the world economic space. At the beginning of the 21st century, the 200 largest companies in the world produced about 60-80% of all industrialized countries, mainly concentrated in three centers - the USA, Europe, and Japan. To date, transnational corporations control 1/3 of world industrial production and give 1/3 of world exports [9]. The gross product of all networks of transnational corporations can be

estimated at more than 8 trillion USD, which is about ¼ of world GDP. Only the foreign affiliates of the transnational corporations account for 10% of the world's gross domestic product and the sales of affiliates of only 100 largest multinational firms in the world reached 2 trillion. USD, the number of employed - 6 million [6, p. 154]. As for the sectoral structure of transnational corporations, it is as follows: 60% of international corporations are engaged in manufacturing, 37% in services and 3% in agriculture and mining. Today, on average 45% of sales of transnational corporations is export. International commodity trading is almost entirely under their control. Yes, they hold 90% of world trade in wheat, coffee, corn, timber, tobacco, jute and iron ore, 85% - copper and bauxite, 80% - tea, 75% bananas, natural rubber and crude oil [12, p.96] As noted in the American magazine Fortune, the leading role among the 500 largest transnational corporations is played by such complexes as oil refining, electrical engineering, chemistry and automotive. Their sales are about 80% of the total activity of TNCs. It is important to note that the financial markets of transnational corporations play a significant role. The proof of this can be the following example: their aggregate foreign exchange reserves are several times higher than the reserves of all the combined central banks of the world. It is equally important that transnational companies account for 80% of global research.

Currently, each of the 500 largest transnational corporations in the United States has an average of 11 industries, while the most powerful are 30-50 industries. In the group of 100 leading industrial enterprises in England, multi-sectoral are 96, in Germany -78, in France -84, in Italy-73. Modern transnational corporations are constantly increasing their economic potential by merging and absorbing both large firms and small firms. The number of multi-billion mergers, such as British Petroleum from Amoko in the amount of $ 50 billion, and Exxon with Mobil in the amount of $ 80 billion, are sharply increasing. Growth in the fusion and in the field of finance. Here, as a vivid example, Citibank and the Travelers Group may be trapped in the amount of $ 72 billion [13, p.24]. By increasing their expansion, transnational corporations are actively using such specific forms of development of the world market as licensing, franchising, providing technical and marketing services, etc. Transnational corporations and transnational banks actively manifest themselves not only in the economy, but also in

financial-investment, scientific-technical, military, technological, economic, and even in politics.

Although transnational banks began to internationalize their operations somewhat later than industrial transnational corporations, they subsequently overtook them in scope. The largest banks that exercise capital dominance set the tone in international operations. Thus, 84 largest TNBs have concentrated 1/3 of aggregate assets and deposits of the Western world. As a rule, they have:

- A broad and developed network of overseas units located in the major world financial centers and national markets of the host countries;
- A large deposit base;
- High level of universalization of its activities;
- A high share of international operations in aggregate activities.

In the current situation, multinational banks are actively involving transnational corporations in the global capital market and thus increase their own economic positions in the national corps. Such a feature of the functioning of transnational bank capital is increasingly reflected in the servicing of foreign branches and branches of industrial and trading companies, and is characteristic of banks of all industrialized countries because it provides them with additional competitive advantages. Namely:

• Transnational banks have broad international channels, have foreign currency resources, and, as a result, quickly win local clientele;

• Transnational bank services in local markets cost less than the services of local banks, due to the fact that the last for a long time, taking advantage of the benefits of its monopoly position, kept the cost of banking services at a high level;

• Transnational banks receive significant independence and ability to maneuver while maintaining the client's TNCs of the country of origin.

On the one hand, transnational bank`s operations become more stable, more stable and more global, but on the other hand, their activity depends to a large extent on the state of local legislation, the trading and investment market, the local price and interest rates. In the broader sense, from the indicators of the domestic and home economies' development and the development of electronic technologies (since significant amounts, the daily amount of which reaches 1 trillion dollars, with the help of the international financial computer network can be

easily transferred from one end of the world to another). Transnational Corporation and transnational bank actively manifest themselves not only in the economy, but also in financial-investment, scientific-technical, and military, technological, economic, and even in politics.

The diversification of the global financial system has led to the further development of international stock exchanges and international currency auctions. The stock exchange can be defined as a well-organized market where securities holders carry out sale-purchase transactions through the members of the exchange acting as intermediaries. The largest online exchange, based on trading volumes of derivative financial instruments, today is the European Electronic Exchange Derivatives (EUREX - Deutsche & Swiss). This stock exchange was created in 1998 as a result of the merger of the German Deutsche Nerminborse (DTB) and the Swiss SOFFEX. The success of EUREX is due to the presence of an active money market, using the modern electronic trading system. It is thought that international currency auctions can be defined as international contests for the right to purchase currency at the international level. However, today's currency auctions have become more developed at the national level. In Ukraine, their activities are enshrined in the NBU Resolution on the introduction of currency auctions by the National Bank of Ukraine.

The development of the global financial system is not in place, but is in constant dynamics, having prospects for expanding its structure by covering new spheres of activity, the functioning of the world economy. All components of the world financial system are multifaceted and interconnected, and therefore for a harmonious and efficient functioning of it, the necessary condition is the coordinated work of structural elements.

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CHAPTER 23

INTEGRATION OF UKRAINE INTO THE GLOBAL INNOVATION SPACE

Anatoliy P. Rumyantsev

In today's conditions, the stability of Ukraine's economic development is determined by the innovative strategic direction of its national economy. An important factor in the implementation of the state concept of innovation development of our state is the orientation to the modern challenges of the scientific and technological revolution. In this context, the problem of Ukraine's integration into the world of innovation is of particular importance. Implementation of measures to intensify Ukraine's participation in the international market of innovative services will strengthen the competitiveness of the national economy in the global economy.

The development of globalization processes leads to the formation of prerequisites for a well-balanced use of the benefits of the combined scientific and technical potential of the countries of the world. Without taking into account this factor, no country in the world community is able to ensure the development of the national economy in all areas at the level of the requirements of modern science and technology. This circumstance objectively affects the correction of national economic interests, including our country. Despite the different political views of certain branches of domestic government, in the issue of an innovative strategy for the development of the Ukrainian economy, it is necessary to note the adoption of a common platform, which is fixed, in particular, in the document "Universal of national unity". In it, among the priorities of national development, the need to achieve a high quality of life for citizens, competitiveness, based on knowledge of the economy is determined. This document also requires the introduction of the principles of scientific and technical and innovation development and the achievement of annual GDP growth rates of not less than 5% and encouraging the creation of at least 1 million jobs each year. The realization of these tasks is possible, first of all, with the active participation of Ukraine in international innovation activities, with a comprehensive consideration of global trends in the development of

the world economy. The basis for achieving this strategic goal is the formation and consistent implementation of national economic interests, primarily in the global innovation space.

Given the place of national interests in achieving the highest level of innovation development of our state, it is necessary to clearly define their economic nature, content, preconditions, peculiarities of formation, direction, structure and, above all, methods of realization. The appropriateness of this approach, in particular, with reference to national economic interests, would increase their evidentiary value. This may be facilitated, firstly, by the definition of the nature and parameters of a particular national economic interest. Secondly, it is a clear perception of national economic interests as a system education with organic connections and subordination of its structural elements. Third, it is weighed decision-making on optimizing the existing mechanism for the implementation of national economic interests. Fourthly, it is an understanding of the process of realizing national economic interests as a concrete objective real form of their manifestation and embodiment in the practice of management. Fifth, it is timely prediction and definition of the nature of contradictions in the national system of economic interests and its interaction with the subjects of the world economy. Sixth, it is an approach to finding rational forms and methods for solving dialectical contradictions inherent in national economic interests. Seventh, it is taking into account the factors influencing the transformation of national economic interests, first of all, the globalization of international economic relations between countries of the world community.

These features of national economic interests, of course, do not exhaust the various aspects of their manifestation, including in the global innovation space. But the orientation towards them leads to the adoption of scientifically sound solutions in solving problems related to overcoming specific crisis social and economic phenomena in our society, finding acceptable compromises in the implementation of economic relations of Ukraine with the states of near and far abroad, the solution tasks of sustainable innovation development of Ukraine.

Considering the question of economic nature and a content of interests, first of all, we have to note their dynamism and variability. This is due to the mobility of the preconditions and factors that shape the essential features of economic interests of subjects of different levels

of entrepreneurial activity. The main objective precondition that determines the content of the system of economic interests of a particular country is the concrete historical level of development of national social production. It is about availability, a degree of maturity and the use of natural, material, industrial, scientific, technical, labor, financial resources that exist in this country.

At the same time, in the conditions of globalization of the world economy, this objective basis for the formation of national economic interests is significantly transformed and increasingly depends on the influence of external factors of the development of the interconnected material basis of social production of the countries of the world community. This concerns the problem of the international use of fuel and energy and raw material complexes by interested countries, the formation and operation of objects of international production, the rational use of the combined scientific and technical, labor, and financial potential of the world community. Therefore, globalization as a natural process of development of the world economy actually creates qualitatively new conditions and raises national social production into a higher degree of innovation development.

Since globalization is now turning into a dominant driving force, which in many cases corrects the content and conditions for the realization of national economic interests of the countries of the world, it is appropriate to consider the essential features of the manifestation of this process.

The main directions of action, the concrete forms of manifestation of the process of globalization of the world economy, originate from the last third of the last century and receive more and more impulses for their development in our time. During this period, globalization becomes one of the central problems that attract the attention of scientists of the fundamental, applied and humanitarian branches of science. First of all, globalization as a multifaceted phenomenon that has covered all aspects of social life requires a theoretical understanding and generalization of the essence of this phenomenon. In numerous scientific papers of foreign and domestic scientists, various components of the content of globalization as an economic category are investigated. But the dialectical connection of this process with the system of economic laws and laws of the development of world economy in the scientific literature is not yet sufficiently highlighted. It is this aspect

of globalization should also pay attention, since research in this direction is oriented towards the formation and adoption of system decisions to regulate this phenomenon,

In general, globalization can be considered as an accelerated development of the spread of various phenomena and processes inherent in the social production of certain regions and countries of the world, in the general planetary space. In the economic context of shaping the preconditions of globalization, it can be traced within a rather remote and strategic retrospective. These are, first of all, the development and development of international trade relations, the international capital movement, international labor migration, and joint entrepreneurial activity. The organization and regulation of these objective processes at the international level were important. It found a concrete manifestation of the functioning of the world monetary system and of its major institutional institutions such as the World Bank, the International Monetary Fund, the actions of the GATT / WTO, the international labor organization, many international, economic, business organizations, associations, joint stock companies partnerships and joint ventures.

The indication of the preconditions of the globalization of the world economy reflects some of the essences of the laws of development of the latter, namely: the internationalization of economic life, and in particular, the sphere of exchange; international division of labor and types of its development on the general, partial, inter-branch, branch, unit levels; international co-operation of production; approximation of national economies, equalization of levels of economic development of countries of the world; international economic integration; transnationalization, etc. However, globalization in the system of laws of development of the world economy occupies, in our opinion, a special place. Its definition can supplement the essential features of this phenomenon as a regular higher stage of development of world civilization. They are reduced to the following.

Globalization, firstly, appears as a lawfulness of a higher order, which determines the current priorities of the development of the world economy. Secondly, globalization is a legitimacy of the world economy, which is the result of the action of the corresponding system of economic laws and regularities. Thirdly, globalization as a process of operative distribution in the generally planetary space of innovations in

material production, international trade in goods, services, investment activity, monetary and financial area, science and technology, information is based on the existing industrial infrastructure of the world economy. In this sense, globalization is a qualitative leap in the development of the world economy, based on the material basis and the mechanism of functioning of modern international economic relations, oriented towards the full use of the benefits of the combined economic science and technology potential of the countries of the world community. Fourthly, in the process of globalization of the world economy, not only traditional forms and methods of realization of world economic relations are used, but also new complex organizational forms are formed in the structure of the mechanism of functioning of global development of the world economy, which involves combining the efforts of the countries of the world with a view to the joint development of economic problems of a planetary nature. Fifthly, globalization as a regularity of the world economy has a contradictory nature, objective features, and subjective factors, which often lead to unforeseen consequences. It affects the hegemony in the world of the most economically developed countries, the concentration of significant financial, material and scientific and technical resources in them, an attempt on their part to regulate and control individually the accelerated development of economic processes at the national and international levels.

Consequently, globalization as a pattern of development of the world economy leads to essential qualitative changes in the concrete historical conditions of social production, mechanisms of regulation of national economic complexes, expands the possibility of their integration within the planetary economic space. All of this, of course, affects the content of national economic interests, synthesizes the internal and external preconditions, which derive from the current material interests of the countries of the world, and also strengthens the global essential features in them. Proceeding from the above general principles of development of the countries of the world community, one can concretize the genesis of Ukraine's national economic interests in the direction of making full use of the world's innovative achievements. He finds expression in the following.

The functioning of domestic production and the realization of its results, for example, of goods and services in the world markets,

objectively leads to the emergence of industrial and individual needs of economic entities of our country. On a national scale, the content of these economic needs is in the relations between business entities on the justification, a clear definition of the purpose of social production. These economic needs act as a systemic entity, which has its subordinated subjective, sectoral, regional, institutional structure. The efforts of the carriers of economic needs to satisfy them by finding the appropriate optimal ways precisely determine the formation of national economic interests. The specific content of national economic interests in the international economic sphere is disclosed in the relations between the subjects of social production and their foreign partners regarding the formation of the conditions of foreign economic agreements (contracts) and the realization of their purpose. It is in these conditions that quantitative, qualitative, cost parameters of national economic interests can be determined.

The main task here is to achieve the best possible conditions for the implementation of international economic contracts, which will mean the level of implementation of the relevant national economic interests. We must also keep in mind that the economic interests of our country and its foreign partners do not objectively coincide, and their collision leads to the emergence of contradictions. It is possible to remove the latter within a certain period of time by finding compromise solutions on the adoption of mutually acceptable principles, forms, methods, tools, and levers of development of foreign economic relations. A good example here can be the relationship between Ukraine and Russia, Ukraine, and Turkmenistan in relation to the supply and transit of gas through our country.

Determining the direction of economic interests of Ukraine in the global innovation space requires clarification of its content, scope of operation, strategic guidelines for development. In general, the global innovation space, its formation is a planetary phenomenon. It can be considered in various aspects. In exogenous terms, the global investment space covers the latest managerial decisions, measures, and material, financial, scientific and technical resources that are used to rationally solve all global humanity problems. In a more specific direction, the global investment space can be defined as the highest stage in the development of the world's scientific and technological potential, its material, financial, information infrastructure, which is

the property of different countries of the world and is used on mutually beneficial grounds.

The main form of manifestation of the global innovation space is the development of a global investment market. It is conditioned by the rapid development of the scientific and technological revolution, an operational continuation of its achievements in material production, in all spheres of public life. Another important factor of the global innovation market is the rise to a qualitatively new level of processes inherent in international economic relations in general. It concerns the internationalization of the economic life of the countries of the world, in particular, capital, commodity circulation, labor, services, deepening of the international division of labor at the general, inter-industrial, branch, territorial levels, co-operation of production processes, development of integration ties between the states, subjects of the common entrepreneurial activity, expansion of the process of transnationalization, etc. Under these conditions, a new prospect of international trade in high-tech goods, services, which in the strategic aspect involves the formation of a global market for innovations, opens.

The main prerequisites for the development of the global innovation market include the following. First, there are certain grounds for the formation of mechanisms for regulating the global innovation market. Regarding its legal and regulatory framework, it is necessary to note the use of a whole range of legislative, legal acts regulating trade in innovations on a bilateral and multilateral basis between the states of the world. Of particular importance here is the further development and implementation in the world practice of the provisions of GATS, TRIPS, which now cover the bulk of international trade in innovative services.

Secondly, it is advisable to pay attention to the development of institutional instruments of the mechanism for the formation of the global innovation market. It is about creating a network of international specialized organizations, associations, which already number more than five thousand. Their important functions are the provision of mainly commercial, industrial, consulting, informational, scientific, technical, financial, managerial and other services.

Third, the development of the international exchange of innovations in modern conditions contributes significantly to the formation of

a global financial market. It leads to a higher level of functioning of the value levers. In the meantime, it should be noted, first of all, the development of international payment systems, e-business, the use of lending programs by international small and medium-sized banks, the inflow of foreign investment in the development of innovation infrastructure, the improvement of the pricing method for new products, services, optimization of the taxation system for innovation world market.

Fourth, the quality and efficiency of information provision for the formation of the global innovation market are increasing. Modern communicative means allow reacting promptly to the dynamics, conditions of any regional market of innovations, its branch or consumer component.

Fifth, the global innovation market does not develop in isolation. It is a consequence of global processes that now cover the whole system of the international economy. Therefore, the global innovation market should be considered as a subsystem, which acts as one of the leading directions in creating a planetary economy.

When determining the priority directions of realization of Ukraine's economic interests in the global innovation space, one should consider the following. First of all, state can as much as possible use the possibilities of global innovation space, first of all, with the mobilization of internal resources and external factors, which should be aimed at raising the level of industrial development in Ukraine. It is about solving the tasks of reconstruction, modernization of fuel and energy, metallurgy, chemical complexes, a creation of conditions for the rapid development of industries and types of production, which determine the scientific and technological progress. An important strategic precondition for solving this problem is the proper financing of the development of domestic science and education.

Secondly, it is important to form national directions of Ukraine's participation in the global innovation market. Our state should focus on expanding the range of its proposals for the sale to foreign partners of the latest technology, materials, technologies, innovative services that meet world standards. As a buyer, Ukraine in the global innovation market should decide on the acquisition of the latest innovations in order to promptly introduce them into national production and bring the domestic economy to a higher level of international competitiveness.

Thirdly, it is necessary to carefully and purposefully develop the innovative cooperation of our country on a bilateral and multilateral basis. It is advisable to adhere to the multi-vector model of development of mutually beneficial international innovation links. One of the main priorities for the future, of course, should remain the cooperation with Russia in the space industry, aircraft engineering. As far as foreign countries are concerned, they deserve the full support of Ukraine's innovative cooperation projects with the EU. Practical innovation orientation here is characterized, for example, by the implementation of EU research frameworks. So, the seventh EU Research Framework Program for the period 2007-2013 (FP-7) is currently under implementation. Our country participates in the realization of the FP-7, the financial support of which is 50 billion euro. FP-7 provides for the development of innovative projects in the vital areas of development of partner countries. Among those that directly meet the economic interests of Ukraine, innovative tasks can be identified in energy, transport, space, nanotechnology and nanoscience, new types of production, the environment, informatics, communications, biotechnology, agriculture, healthcare, humanities, and more.

In general, the question of the formation of innovation space and its main component of the global innovation market is urgent and is conditioned by the objective factors of the development of the world economy. In these circumstances, new tasks are being faced by domestic scientists, specialists, and representatives of international business. They are in search of new forms, methods, tools, levers of rational use of opportunities of global innovation space in order to more fully realize the economic interests of Ukraine and its partners in the world community.

EPILOGUE

In the economic evolution of the world community, the innovative direction of development is increasingly becoming decisive. It covers, without exception, all sectors of the world economy, creates the preconditions for its transformation into a new qualitative phase of development - the international economic information system. The objective factor of this process is the modern scientific and technological revolution, the use of which results are oriented on the rapid introduction into production of the latest advances in science and technology.

Revolutionary innovation changes in technology, materials, management in our time occur, first of all, in the leading industries of the industrialized world. These are electronics, instrumentation and machine building, aircraft engineering and space industry, the latest trends in the development of the fuel and energy complex, the light and food industry, the medical sector, the pharmaceutical industry, automatic systems, robotics, defense, infrastructure industries, etc. Comprehensive support for innovative components of their development is one of the main factors that lead to an increase in the level of international competitiveness of national economies and raises the world economy as a whole on a higher level of scientific and technological functioning.

Separately, it is necessary to highlight the role of nanotechnology in the implementation of the innovative development of the states of the world community. The widespread introduction of nanotechnology in various sectors and spheres of economic life of the countries of the world will undoubtedly lead to the creation of a new technological basis for the existence of humanity. Its essential features will be the multiple growths of capacities and capabilities in minimizing the amount of computer technology, the transition to the use of promising functional ecologically safe types of fuel and energy resources, the use of qualitatively new materials on the basis of achievements in such fundamental sciences as electrochemistry, health and others. The application of nanotechnology advances increasingly serves the purpose of national and international business. If nanotechnology research and implementation their results in practice so the United States, Japan, Western European countries have allocated

about 10 billion dollars in recent years. So it is expected that these expenses will grow to $1 trillion in 2015. At the same time, the number of students in the field of nanotechnology will reach 2 million people. This indicates a rather high pace of nanotechnology development, first of all, in economically developed countries of the world.

The solution of innovative tasks related to the economic, scientific and technological and socio-economic growth of the world economy is possible provided that an optimal mechanism for their implementation is formed. In the structural plane, its components should be institutions of mega-level, as international organizations, including scientific, technical, branch, regional profile. The relevant authorities may function at the level of individual institutional groups. Bilateral and multilateral agreements on cooperation in the field of nanotechnology are gaining significance at the interstate level. The Skolkovo Innovation Center in Russia, the development of hi-tech clusters, and technology parks should become promising in this respect.

Important structural elements of the mechanism for the implementation of innovation in the development of the world economy should be, first, the development of a normative and legal framework for regulating this process at the national and international levels. Secondly, the development and implementation of international science and technology development programs for individual regions, such as the 6th and 7th framework programs of the EU, the EURICA program. Third, the formation of a system of incentives and privileges, sources of stable financial support for the implementation of innovation projects, in particular, by attracting public and private funds, money resources of international monetary and financial organizations. Fourthly, it is the formation of modern units in the field of informatics, communications, communications, which are oriented to the generalization and operational use of the world and innovative achievements. Fifthly, it is the use of certain institutional tools, forms, methods, principles, levers of innovation process management for their effective use in the global economy and individual countries of the world.

In the context of the innovative development of the world economy, it is certainly worth considering the introduction of scientific and technological advances in the Ukrainian economy. Unfortunately, our country has not yet reached the level of economically developed

countries of the world. Among the main reasons hindering the innovative development of Ukraine, one should note the insufficient level of development of productive forces, imperfect legal and regulatory framework for the implementation of innovative research and projects, lack of proper financing of the latter, low level of development of venture business and participation of our state in international scientific and technical cooperation. Nevertheless, strategic guidelines for Ukraine's innovation development are already outlined and found in the documents of the relevant state authorities. In this regard, it is important to create an optimal mechanism for the implementation of national innovation programs, to find ways to weigh the inclusion of our state in the world of innovation space.

Determination of priority directions of innovative development of the world economy is a promising benchmark for accelerated scientific, a technical and economic growth of the world community. Their realization should be aimed at achieving certain qualitative parameters of all sectors and spheres of social production of the interested countries of the world, principles, forms, methods of their mutually beneficial economic interaction. On this innovative basis, the development of the world economy can be expected and a significant increase in the level of satisfaction of the growing multifaceted needs of mankind.

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IN WORLD TRADE DEVELOPMENT**

The monograph

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