

## SECURE ENVIRONMENT FOR E-SERVICES IN UKRAINE

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The concept of e-service represents one prominent application of utilizing the use of information and communication technologies in different areas. Basically, there are three main components [1]: service provider, service receiver and the channels of service delivery. For example, as concerned to public e-service, public agencies are the service provider and citizens as well as businesses are the service receiver. The channel of service delivery is the third requirement of e-service. Internet is the main channel of e-service delivery while other classic channels are also considered.

Electronic services are divided into the following categories [2]:

- Health care;
- Security and court;
- Finance and taxes;
- Transport;
- Entrepreneurship;
- Citizenship and migration;
- Land and ecology;
- Construction and real estate;
- Social protection.

Due to the Covid-19 pandemic, there is a need to improve the safety of Ukrainian citizens. At the moment, there is an active improvement of e-services, which is why the E-service Development reform was created.

The reform is designed to provide people and businesses with access to quality and convenient public services free of any corruption risks.

We need changes because [4]:

- The level of information protection in the system is low;
- Poor attention to training local government employees to work in the system of electronic document management, training in e-government;
- Insufficient funding for the implementation of administrative services in electronic form;
- Low level of computerization of households;
- Uneven and insufficient level of Internet penetration in Ukraine;
- Insufficient level of computer literacy, as well as public awareness of opportunities and benefits of receiving e-government services.

In order to protect people's health as much as possible, the government created the Diya program. It is an application which stores all important documents in one place on your smartphone and all services are online which is fast, convenient, and with humane attitude.

The following documents are available in this mobile application:

- a digital national Ukrainian passport of as an ID-card and a digital international Ukrainian passport (1 country in the world);
- a digital driving license (10 countries in the world);
- a digital vehicle registration certificate and a compulsory vehicle insurance policy;
- a digital student ID;
- e-mail notifications.

To improve security of e-services we have to:

- Provide 2-factor authentication for public e-services  
(Two-factor authentication helps prevent e-Services accounts from being taken over by cybercriminals who may be adept at stealing passwords but are unlikely to have the user's mobile phone);
- Keep up with service continuity requirements for essential e-services  
(High availability: Provide for the capability and processes so that a business has access to applications regardless of local failures. These failures might be in the business processes, in the physical facilities or in the IT hardware or software.  
Continuous operations: Safeguard the ability to keep things running during a disruption, as well as during planned outages such as scheduled backups or planned maintenance.  
Disaster recovery: Establish a way to recover a data center at a different site if a disaster destroys the primary site or otherwise renders it inoperable.);
- Operators have to appoint a cyber-information security manager.

In our opinion, all these actions can help the government improve people's living standards. People will start to rely on e-services more as security improves, which is going to be more convenient for everyone since we won't have to carry all our documents with us.

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