MAIN CHALLENGES OF AIRLINE INDUSTRY AND PROPOSED SOLUTIONS

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The aviation industry changed the whole world in the past. It brought a huge amount of opportunities to people and facilitated their life. Moreover, the aviation industry turned the world into a single Globe system.

At present, the aviation industry has been set 20 years back. Experts say that passenger travel could normalize to pre-pandemic levels only in 2024. But until countries and territories can fully open their borders again, aviation is encountering difficulties at the present moment. So, there is a question: «In what way can the flights be revived as soon as possible? »

To avoid the distribution of a virus, first of all, **reliable and fast tests** are necessary. They are the most effective measure to stop the pandemic. As the experience has shown tests should replace quarantine and lockdowns. It is necessary to understand for all people including our authorities and governments that testing is a reasonable and safe substitute for quarantine. Because quarantine is a blunt tool. ***A reliable protocol for testing*** will help to reopen the borders of countries.

The next thing is **vaccination.** Will people be able to fly if they have already inoculated? «The development concerning the vaccine is a very welcome development. But it is mistaken to think that vaccine is going to be an overnight panacea for the revival of the aviation industry». It goes without saying that it is a rather long process. Special lists say that roughly three or four years are necessary to inoculate only ¾ of population not taking into account re-vaccination and the logistics of distribution the vaccine. As the specialists say that there might not be too much industry left if we count on vaccination.

That is why what is the most essential thing is to continue with the layered approach that the aviation industry has been taking in relation to**: disinfecting aircraft, personal protective equipment for passengers as well as for staff, contactless innovated equipment.**

To clear the air, let us have a look at the future advanced and absolutely new preventive measures. At the airports new check-in procedures are appearing — facial and iris screening, testing touchless kiosks that print your boarding pass and luggage tags directly from your phone, plexiglass shields at counters. As to the sanitation and disinfection of the planes and terminals, autonomous robots are being implemented. UV cleaning tech will allow to solve the problem of killing germs. Ultraviolet lightbulbs will disinfect terminals and cabin items.

How to improve efficiency of the airlines? Outdated and less fuel efficient aircraft will be taken out of operation. All aircraft with 4 engines (A380, A340, B747) will have more difficult stand compared with long-distance twin-engine aircraft

(B777X, B787 and A350) as they consume more fuel. Recycling processes of the disposable dish for saving air company money.

Aircraft will become more friendly for the environment (aircraft with biofuel or synthetic-jet-fuel). There is a high probability that fuel will be made from biological sources — crops, algae, or wastes) or hydrogen. That will help save fuel costs and the environmental sustainability of the fuel. Besides, new V-shaped aircraft are going to emerge. They will save 20 percent fuel purely from aerodynamics and not from improved engine technology.

Aviation experts say that airlines will be faced with pilots shortage in the nearest decade. In the nearest 20 years, 600000 pilots are expected to be necessary. "We were deep into a pilot shortage pre-Covid, meaning that the second a pilot was qualified, they were being hired by an airline," said Kenneth Byrnes, associate dean and chairman of flight at Embry-Riddle Aeronautical University. While that's no longer the case with the current state of the industry, experts and industry trade groups warn the pandemic has only put a pause on a shortage, that it hasn't gone away with more pilots nearing the age of retirement and because of a continuing undersupply of new pilots.

Already during the first half of 2020, 50 percent of the pilot workforce was positioned to reach the mandatory stopping point — retirement — within 15 years, said Faye Malarkey Black, president and CEO of the Regional Airlines Association (RAA). Within the half of that workforce, 15 percent must retire in five years. "The pandemic has just temporarily made the issue seem like it isn't an issue anymore," said Women in Aviation CEO Allison McKay. But she underlined that when the aviation industry recovers from pandemic to the level of 2019, approximately in 2024, the shortages will be severe.

On the other hand, some scientists reckon that planes with pilots in the cockpit could be replaced with drones or only one pilot is supposed to remain in the flight deck. And that would be so-called solution to restore aviation.

Recovery of the aviation is plausible and it is connected with sophisticated technologies and artificial intelligence. We came to the conclusion that common items are aimed at: 1) passenger health confidence; 2) efficiency (fuel saving, airline cost economy); 3) environmental sustainability of flights; 4) constant upgrading and enhancement of professional level of aviation staff.

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