
**THE ROLE OF INFORMATION TECHNOLOGY IN THE DEVELOPMENT OF THE AIR
TRANSPORTATION MARKET**

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Nur-Sultan, Kazakhstan***ANNOTATION**

The article is devoted to the analysis of the aviation industry in Kazakhstan. The issues of introduction of information technologies in foreign and Kazakh airlines are considered. The analysis of software used in both Kazakh and foreign airlines is made. Modern achievements in the field of information technology applied in the field of air transportation are considered.

Keywords: aviation, air transportation, airline, information technology, software, economic development.

1. INTRODUCTION

Air transport is essential for social, cultural and economic development, which supplies a rapidly moving population, millions of people and billions of dollars to the world's markets. The air transport sector includes aircraft suppliers and operators, engine manufacturers, fuel suppliers, airport operators, ground companies, air traffic control and security systems. Air transport also plays an important role in economic growth. Its global economic impact is estimated at approximately \$ 3,000 billion, which is equal to 8% of GDP [1]. For modern companies, it is important to retain their customers, compete with other companies, and get information about customers, competitors, and suppliers as quickly and accurately as possible. In addition, it is important for them to reduce costs and save the necessary data. Fast and timely data processing is very important. Since the process of working on air transport is complex, there is always a need for technological work. It is necessary to coordinate processes specific to the air transport industry, from aircraft to transport security, from airport operations to baggage management, as well as to coordinate the process of traditional use. Due to the development of information technologies, the aviation industry has changed dramatically over the past 30 years. He proposed, together with the Internet, communication channels that closely connect airlines with their potential customers. Airlines used many channels to sell tickets. As a rule, they sell tickets directly through channels, including through sales offices and communication centers and travel agents and tour operators. Using the Internet to search for and buy tickets has become a familiar situation in the tourist markets. The Internet has changed the paradigm of ticket distribution and offers new alternatives. Airlines have recognized the Internet and information technology as a source of information dissemination and revenue-generating tool.

Recent technological advances in the service sector have led to the transformation of the service process from individual meetings to self-service. Thus, customers can independently satisfy the need for services via the Internet, telephone or ATM, for example, selling tickets, withdrawing funds from the bank, etc. b. for. These self-service technologies will be somewhat attractive, involving a large number of service organizations and allowing them to standardize service, reduce labor costs, expand service capabilities,

as well as increase the efficiency and quality of work with customers. In the face of strong competition in the airline market, many airlines are trying to reduce costs and establish direct contact with their customers. Information technology, including the Internet, has provided a distribution channel that connects airlines closely with their potential customers. Existing research on the quality of data and information in the IS shows that the completeness and accuracy of the information are the desired results. A representative model is the air transport industry. In addition to traditional travel agencies and special channels for airlines, such as airline ticket offices and portals, the Internet in 2010 enabled the creation of an online travel agency channel where existing and new entrants benefited from modern e-market technologies and online booking systems. Passenger check-in services for the aviation industry are developed at self-service kiosks, online or even with the help of mobile phones. This will allow passengers to reduce waiting times and reduce costs for airlines and airports. Modern cost-effective and competitive airlines need the ability to manage future opportunities and successful improvements. In addition, airlines face challenges such as rising aviation fuel prices, safety regulations and growing environmental challenges. In the airline business, the ability to control flight costs, fuel, food, ground service, and pilots' salaries and flight attendants can determine an airline's success or failure.

2. Information technologies in foreign airlines

In 2004, IATA (International Air Transport Association) launched a program to simplify StB business, permitting airlines to minimize fees and make travel convenient. The purpose of the program is to change the things to do of the air transport industry, which will lead to better passenger services and lower expenses in this industry. The modern enterprise simplification application saves the enterprise up to \$ 14 billion annually. IATA is a global trading business enterprise created by using a team of airways 60 years ago and presently representing 230 airlines, which account for 93% of planned global air travel. Today, the mission of IATA is to provide, guide and service the aviation enterprise [2].

The cause of all the things to do that airlines characteristic is to supply passengers with comfy and speedy flights. To cope with pricey and complex systems, IATA has prepared a listing of essential desires from reserving to boarding and baggage

regulations. These are digital tickets, boarding passes with the bar code BCBP (Bar Coded Boarding Pass), radio Frequency identification RFID (Radio Frequency Identification), the digital cargo baggage improvement software BIP (Baggage Improvement Program), and others.

United Airlines used to be the first airline to problem e-tickets, decrease again in 1994. However, a decade later, solely 20% of all aircraft tickets have been electronic. The organisation ignored probabilities to preserve on costs and make it simpler for passengers to travel. In June 2004, IATA set a aim for the organization to supply a hundred percentage of e-tickets inside 4 years. At the time, many believed that this used to be once not a practical goal. Evolving standards, uncertainty about returns on investment, and skepticism about purchaser acceptance of paper documents in some aspects of the world had been among the motives why e-tickets have been no longer implemented. It took only four years to attain a hundred percent of e-tickets. Together with IATA, airlines, tour agents, airports, laptop providers, and GDS (Global Distribution System) have moved the entire agency from the paper age to the electronic era. Armed with a mandate from the Board of Directors of IATA (International Air Transport Association), StB (Simplifying the Business) was once as soon as able to mobilize the complete industry. By enticing and grasp the desires of partners—from GDS (Global Distribution System) to floor handlers – StB (Simplifying the Business) has facilitated the introduction of e-tickets all through the industry.

IATA recommends that its contributors use Radio Frequency Identification (RFID) scanning due to the fact it is more efficient than barcode technology. RFID scanning is listed as one of the ideal techniques for recording and tracking facts in the implementation information handy on the IATA website. Other utilized sciences identified as desirable for baggage tracking encompass laser scanning, guide recording, Optical Character Recognition (OCR) and other utilized sciences such as Bluetooth, Wi-Fi or GPS (Global Positioning System), in accordance to the manual.

The BCBP (Bar Coded Boarding Pass) assignment has moved the industry to boarding passes that use the preferred 2D IATA barcode, eliminating the want for magnetic stripe boarding passes. This initiative was initiated by using the Board of Governors of the International Air Transport Association (IATA) as a key precedence in 2004 as phase of its business facilitation program, an enterprise initiative aimed at reducing expenses and enhancing services at the identical time. The BCBP (Bar Coded Boarding Pass) presents extra airport options, extra passenger convenience, and saves the industry more than \$ five hundred million a year.

e-Freight is an enterprise initiative in which carriers, freight forwarders, floor services, shippers, customs brokers and customs authorities participate. E-Freight pursues to build an end-to-end paperless air cargo transportation technique the usage of regulatory frameworks, today's electronic communications and tremendous data. The e-Freight Roadmap describes a common end-to-end enterprise method to getting rid of three sorts of documents:

1. Customs document
2. Shipping documents
3. Commercial freight documents

The Fast Travel was created to inspire the introduction of self-service alternatives in order to meet the creating wants of customers, limit enterprise costs, beautify the efficiency of airport infrastructure and decorate the pleasant of client service. Fast Travel affords self-service choices that signify annual monetary financial savings of up to \$ 2.1 billion for the industry. By developing common necessities and encouraged practices, IATA promotes the implementation of these initiatives in the organization and improves the splendid of tour for customers [3].

3. Information technologies in Kazakhstan airlines

Due to the large geographical extent of Kazakhstan, air transport plays a large role and often has no alternative. Kazakhstan has 22 major airports, of which 14 serve international traffic. Most airports are underloaded, and the capacity of the Republic's air navigation system currently has more than five times the reserve. Transit of cargo and passenger air transport between Europe and Asia is of great importance for the industry. Within the country, the connection between Nur-Sultan (TSE) and Almaty (ALA) remains out of competition. One-fifth of this demand has a flight Nur — Sultan-Shymkent (CIT), even less — Almaty — Shymkent. The most popular international destination is Almaty-Moscow (Sheremetyevo, SVO). The Moscow-Nur-Sultan flight is slightly inferior in terms of sales. The Almaty-Istanbul route closes the top three. Every week, Kazakhstan's airports serve 2,935 flights, including 1,952 domestic flights, 609 flights to Asian countries, and 343 flights to European countries. Another 31 aircraft are flying to the middle East [4]. In 2019, the annual number of passengers was more than 10 million people. Currently, there are 17 airlines licensed by the civil aviation authorities of Kazakhstan: AirAstana, SCAT Airlines, BekAir, Air Trust, Almaty Aviation, Berkut Air, DETA Air, Euro-Asia Air, Zhez Air, Semeyavia, Kaz Air Trans, kazaviaspas JSC, agro SLA, Zhetysu, Qazaq Air, FlyArystan [5]. Only 3 airlines out of the 17 mentioned above fully use information technology to develop customer service, security, and marketing. These Are: AirAstana, Scat, FlyArystan.

Table 1

Use of information technologies			
Information technologies	AirAstana	Scat	FlyArystan
Web site	+	+	+
Mobile application	+	-	-
Bonus card	+	-	-
Wifi on Board the plane	+	-	-

Table 1 shows the simplest functions that use information technology to improve the quality of service and attract new customers. All three companies have websites where you can get flight information, buy a ticket and check in online. Only one company has a mobile app that has all the features that exist in the company's website. Only one company has a bonus card feature that allows customers to collect bonuses and win prizes. Only one company has Wifi on Board the plane, but it is paid. You can see that only AirAstana fully uses information technology to improve the quality of air transportation and marketing, which helps the company to remain a leader among airlines in the Republic of Kazakhstan [6].

4. Conclusion

In the development of the global air transportation market, information technology plays very important role and helps airlines find a new approach to the development and improvement of marketing, service, and security. Airlines in Kazakhstan, as well as around the world, try to use it to improve marketing and be competitive, both in the domestic and global air transportation market. But many companies and

airports in Kazakhstan have not yet implemented the projects recommended by IATA. Their implementation would help to make the aviation market technological, modern and comfortable for customers of Kazakhstan airlines.

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ВЛИЯНИЕ МОДЕРНИЗАЦИИ КОМПЬЮТЕРНЫХ ТЕХНОЛОГИЙ НА ПРОЦЕСС ОБУЧЕНИЯ.

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АННОТАЦИЯ

В статье раскрываются влияние информатизации на процесс обучения.

ANNOTATION

The article reveals the influence of Informatization on the learning process.

Ключевые слова: Информатизация, образование, дистанционное образование, информационные технологии, интернет, студент по обмену.

Keywords: Informatization, education, distance education, information technology, Internet, exchange student.

Информатизация - общеисторический процесс, в котором информационные технологии играют значительную роль в жизни современных людей.

В настоящее время каждый гражданин имеет доступ к источникам информации. Происходит проникновение информационных технологий в

научные, производственные, общественные сферы жизни людей. Это способствует ускорению научно-технического прогресса, интеллектуализации всех видов человеческой деятельности, созданию качественно новой информационной среды социума, которая обеспечивает развитие творческого потенциала человека.