

Strategic Management of Digital Transformation Processes in the Aviation Industry: Case of Istanbul Airport

Filiz Mızrak

Istanbul Medipol University, Turkey

Gonca Reyhan Akkartal

Istanbul Medipol University, Turkey

EXECUTIVE SUMMARY

The Fourth Industrial Revolution has profoundly affected all sectors, quickly leading to significant technological changes. This new revolution has also affected aviation systems that have a direct connection with technology. This revolution has brought about rapid changes especially in airport systems and led to the emergence of the concept of “smart airport.” In this study, the case of Istanbul Airport has been analyzed in terms of digital transformation in order to exemplify the digital applications in an airport. In this scope, the aim of the study is to present a new projection, integrated with a digital business strategy, to businesses operating in the airline industry, where they can successfully realize the digital transformation process and manage this process strategically.

INTRODUCTION

The rapid development of digital technologies changes paradigms in the business world as well as in daily life. Developments in digital technologies in recent years have led businesses to keep up with this process. Cloud technology, big data, artificial intelligence, virtual reality, and other innovative approaches and developments with digital technologies point to the necessity of realizing digital transformation in the entire world economy and businesses. The introduction of the internet, which rapidly has changed the world, and human and business habits, has also introduced the concept of

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digitalization into our lives. This situation continues with the development of the internet and the digital technologies that developed afterward. These developments in technology and communication require businesses to keep up with the rapid flow. Businesses must realize digital transformation and adapt to their processes in today's digital age (Matt, Hess & Benlian, 2015). Digital transformation directly affects the decision-making mechanisms, production and design processes, services they provide to their customers, organizational structures, finance, and cost structures. In a market where competition is intense and globalization is increasing, it causes businesses to make radical decisions and transitions (Mitroulis & Kitsios, 2019).

Like in many sectors, an effective digital strategy is critical to long-term success in the aviation industry today. Thanks to digital technology, companies can both stay ahead of their competitors and innovate to improve their existing business models. Digitization is transforming the expectations of consumers around the world. To improve customer interaction with digitalization, they need to re-evaluate and transform the customer experience by using and adapting to new products, applications, and tools (Richards, Seidakhmetov & Zhunussova, 2020).

Businesses that are in the process of digital transformation and that have achieved a certain amount of digitalization are faced with great risks if they cannot adapt their processes to the rapidly developing technology and cannot achieve continuity. Digital transformation can create both new opportunities and threats if the process is not well-managed for companies from all fields, regardless of the sector. According to Chanas, Myers & Hess (2019), relatively new businesses that embrace the essence of the business in their digital transformation journey will quickly outgrow their traditional competitors by applying the right strategies. In this context, the digital transformation process requires good planning and strategic management of the process. Digital transformation requires comprehensive analysis and strategic vision. Not only technology but also consumer behavior is changing rapidly. The best way to survive, progress and grow in the market with these factors is to adopt a vision of an innovative and flexible approach (Matt, Hess & Benlian, 2015). In today's world where globalization has reached its peak, businesses that can determine the needs of consumers who are hesitant about their needs and desires and the stack of information obtained in every channel and that can offer the right solutions to these needs will be preferred in the competition (Chanas, Myers & Hess, 2019).

The rapid growth in air transport creates a demand above the capacity in many airports, and as a result, the need for a reconsideration of airport policies arises. While 90% of aviation activities take place on the ground, that is, at airports, only 10% take place in the air. With the use of large aircraft, the rate of increase in the number of aircraft landings and departures decreases very slowly, while passenger and cargo traffic increase rapidly. On the other hand, rapid developments in technology have led to significant changes in the aviation industry. This change is expressed as Industry 4.0 and digital transformation. As a reflection of this change, the concept of "smart airport" has emerged for airports, which is an important element of the aviation industry. Although the technology turnover rate is the highest in the aviation sector compared to other sectors, airports need to adapt to these technological changes for their sustainability (Narongou & Sun, 2021).

Digital transformation refers to a comprehensive transformation from the operational activities of enterprises to business models, from organizational structure to customer relations. To manage this transformation process well and reduce the risk of failure, businesses need a digital business strategy in which they will determine their roadmaps within plan and control (Hájník, Harantová & Kalašová, 2021).

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