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DIGITAL PLATFORMS AND THEIR APPLICATION IN THE AVIATION INDUSTRY

Kateryna Molchanova, Natalia Trushkina, Olga Katerna. *"Digital platforms and their application in the aviation industry"*. The article considers one of the directions of digital transformation, namely digital platforms. United Nations Conference on Trade and Development says that digital platforms create new opportunities for companies of all sizes to engage in trade. They can lead to efficiency gains through lower transaction costs and reduced information asymmetries supported by rating systems. Other benefits include lower consumer prices, increased market access, more competition, better use of underutilized resources and increased flexibility for the providers of services. However, gains are not automatic, and there are growing concerns over the rising market power of certain platforms and the related implications for competition, data protection and ownership, consumer protection and taxation and employment policies. Economic policies and regulations will need to maximize the benefits while at the same time minimizing the costs of digital platforms.

Accordingly to Digital Economy Report 2019 by UNCTAD digital platforms provide the mechanisms for bringing together a set of parties to interact online. A distinction can be made between transaction platforms and innovation platforms. Transaction platforms are two/multi-sided markets with an online infrastructure that supports exchanges between a number of different parties. They have become a core business model for major digital corporations (such as Amazon, Alibaba, Facebook and eBay), as well as for those that are supporting digitally enabled sectors (such as Uber, Didi Chuxing or Airbnb). Innovation platforms create environments for

code and content producers to develop applications and software in the form of, for example, operating systems (e.g. Android or Linux) or technology standards (e.g. MPEG video).

Several factors help explain the rapid rise to dominance of these digital giants. The first is related to network effects (i.e. the more users on a platform, the more valuable it becomes for everyone). The second is the platforms' ability to extract, control and analyses data. As with network effects, more users mean more data, and more data mean a stronger ability to outcompete potential rivals and capitalize on first-mover advantages. Thirdly, once a platform begins to gain traction and starts offering different integrated services, the costs to users of switching to an alternative service provider start to increase.

The transformative power of data in the sphere of economic and social interactions means that governments, businesses, and people must adapt to use emerging opportunities and avoid traps and risks. The ability of countries and various stakeholders to master digital transformation varies greatly and depends on their level of development and digital readiness. Developed countries are in many ways better equipped to deal with the growing role of digital platforms than countries with limited resources and capabilities.

The aviation, travel and tourism industry has been at the forefront of digital innovation, but industry and technology trends suggest that further change lies ahead. The sector has been an early adopter of digital technologies and platforms, but steep demand for travel, driven by a growing middle class in emerging markets and the increasing importance of digital experiences, implies that further digitalization will be vital if the expectations of tomorrow's consumers are to be met.

Keywords: digital transformation, digital platform, digitalization, platformization, digital economy, digital readiness.

Катерина Молчанова, Наталія Трушкіна, Ольга Катерна. "Цифрові платформи та їх застосування в авіаційній галузі". В статті розглядається один з напрямків цифрової трансформації, а саме цифрові платформи. Багато комерційних підприємств на сьогоднішній день обирають платформенні бізнес-моделі і дослідження самого поняття цифрової платформи дозволяє зрозуміти причини їх виникнення та цілі існування. Виконано аналіз методології, що оцінює рівень готовності країн до цифрової трансформації і це дозволяє виявити сильні та слабкі сторони на шляху цифровізації. Також досліджені типи та види цифрових платформ в залежності від їх функціональних особливостей. Розглянуті сфери застосування цифрових платформ в авіаційній галузі та існуючі платформи для просування послуг авіакомпаній до клієнтів та платформи призначенням яких є об'єднання учасників авіаційної галузі для оптимального технічного обслуговування та ремонту літаків та обміну інформацією.

Ключові слова: цифрова трансформація, цифрова платформа, цифровізація, платформізація, цифрова економіка, цифрова готовність.

Екатерина Молчанова, Наталия Трушкина, Ольга Катерная. "Цифровые платформы и их применение в авиационной отрасли". В статье рассматривается одно из направлений цифровой трансформации, а именно цифровые платформы. Многие коммерческих предприятий на сегодняшний день выбирают платформенные бизнес-модели и исследование самого понятия цифровой платформы позволяет понять причины их возникновения и цели существования. Выполнен анализ методологии, которая оценивает уровень готовности стран к цифровой трансформации и это позволяет выявить сильные и слабые стороны на пути цифровизации. Также исследованы типы и виды цифровых платформ в зависимости от их функциональных особенностей. Рассмотрены сферы применения цифровых платформ в авиационной отрасли и существующие платформы для продвижения услуг авиакомпаний к клиентам и платформы назначением которых является объединение участников авиационной отрасли для оптимального технического обслуживания и ремонта самолетов и обмена информацией.

Ключевые слова: цифровая трансформация, цифровая платформа, цифровизация, платформизация, цифровая экономика, цифровая готовность.

Introduction. Recently, many aspects of our life have become associated with numbers. Digital data, digital technologies, digital transformation, digitalization, digital economy - these concepts are firmly entrenched in daily routine. Many studies describe the essence of these concepts and provide definitions. To put it simply, the digital world is a world encoded with the numbers 0 and 1. In order to gain access to the digital world, we need certain devices, programs and energy. Now it is difficult to find such a sphere of human activity in which digital technologies are not used. Of course, the level of digitalization is not uniform. Therefore, primitive tribes in the Amazon, Africa and Oceania do not use such technologies at all. However, these are exceptions to the rule, and the Earth is increasingly becoming a digital planet.

United Nations Conference on Trade and Development says that digital platforms create new opportunities for companies of all sizes to engage in trade. They can lead to efficiency gains through lower transaction costs and reduced information asymmetries supported by rating systems. Other benefits include lower consumer prices, increased market access, more competition, better use of underutilized resources and increased flexibility for the providers of services. However, gains are not automatic, and there are growing concerns over the rising market power of certain platforms and the related implications for competition, data protection and ownership, consumer protection and taxation and employment policies. Economic policies and regulations will need to maximize the benefits while at the same time minimizing the costs of digital platforms. [1]

Literature and researches review. Accordingly, to Thomas R. Eisenmann the platform encompasses the set of components and rules employed in common in most user transactions. Components include hardware, software, and service modules, along with an architecture that specifies how they fit together. Rules are used to coordinate network participants' activities. They include

standards that ensure compatibility among different components, protocols that govern information exchange, policies that constrain user behavior, and contracts that specify terms of trade and the rights and responsibilities of network participants. [2]

Idris Mootee notes that most industries today operate on certain platforms and platform owners means market power and usually benefit from economic gain. Many are quick to call their products platforms in a casual manner, but here are some of the key characteristics:

- It must perform one or more critical function in a superior fashion within an industry;
- It must define certain "standards" and has influence over the overall architecture;
- It must be open or semi-open for others to build upon;
- The economics must allow the compliments in the ecosystem to see some upside in order to attract them to participate;
- Early momentum is key for any platform strategy so a lot of negotiation needs to take place to make business trade offs. [3]

European Commission defines that digital platforms provide the technological basis for delivering or aggregating services/content and mediate between service/content providers and end-users. They integrate the components of industrial value chains in a seamless communication between interoperable business processes (e.g. design, production, sales, logistics, and maintenance). [4]

In the literature on digital platforms, the term platform economy is also often found. The platform economy poses significant questions, challenges and opportunities for society, the labour market and organizations. An increasing number of businesses are starting to adopt the platform business model and its digital strategies in order to remain competitive. The Deloitte Company states the platform economy is a complex phenomenon that is significantly disrupting the general concept of 'normal jobs'. It is any type of digital platform that uses the internet to

connect dispersed networks of individuals to facilitate digital interactions between people. Within the platform economy there is a triangular relationship between three parties (1) the platform (2) the worker and (3) the customer. It is the job of the platform to connect people with demand (the customer) to people that provide supply (the worker). [5]

Aim and objectives. The purpose of the article is to study the concept of digital platforms, their place in the modern digital world, their types and the reasons why commercial enterprises are striving to switch to platform business models. Study of the methodology for assessing the readiness of countries for digital transformation allows you to see the strengths and weaknesses of the country and determine the vector of movement. Since the aviation industry is inherent in the use of the latest technologies, digital platforms find their application in this area too.

Results, analysis and discussion. The basic of digital world is digital data. Digital data is machine-readable information. In the Digital Economy Report 2019 of United Nations Conference on Trade and

Development (UNCTAD) digital data and digital platform are considered as major drivers of digital economy's expansion. [6]. The digital economy continues to evolve at breakneck speed, driven by the ability to collect, use and analyse massive amounts of machine-readable information (digital data) about practically everything. These digital data arise from the digital footprints of personal, social and business activities taking place on various digital platforms. Global Internet Protocol (IP) traffic, a proxy for data flows, grew from about 100 gigabytes (GB) per day in 1992 to more than 45,000 GB per second in 2017 (Fig. 1). And yet the world is only in the early days of the data-driven economy; by 2022 global IP traffic is projected to reach 150,700 GB per second, fuelled by more and more people coming online for the first time and by the expansion of the Internet of Things (IoT).

The CISCO Annual Internet Report 2018-2023 announced 5.3 billion total Internet users (66 percent of global population) by 2023, up from 3.9 billion (51 percent of global population) in 2018. [7]



Figure 1 – Evolution of Global Internet traffic, selected years

Source: [6].

Globally, devices and connections are growing faster (10 percent CAGR) than both the population (1.0 percent CAGR) and the Internet users (6 percent CAGR). This trend is accelerating the increase in the average number of devices and connections per household and per capita. Each year, various new devices in different form factors with increased capabilities and intelligence are introduced and adopted in the market. A growing number of M2M (Machine-to-Machine) applications, such as smart meters, video surveillance, healthcare monitoring, transportation, and package or asset tracking, are contributing in a major way to the growth of devices and connections. By 2023, M2M connections will be half or 50 percent of the total devices and connections.

By 2023, the consumer share of the total devices, including both fixed and mobile devices, will be 74 percent, with business claiming the remaining 26 percent. Consumer share will grow at a slightly slower rate, at a 9.1 percent CAGR relative to the business segment, which will grow at a 12.0 percent CAGR (see Fig. 2).

The development and policy implications of data collection and use depend greatly on the type of data involved: personal or non-personal; private or public; for commercial or

government purposes; volunteered, observed or inferred; sensitive or non-sensitive. An entirely new "data value chain" has evolved, comprising firms that support data collection, the production of insights from data, data storage, analysis and modelling. Value creation arises once the data are transformed into digital intelligence and monetized through commercial use.

Accordingly to Digital Economy Report 2019 by UNCTAD digital platforms provide the mechanisms for bringing together a set of parties to interact online. A distinction can be made between transaction platforms and innovation platforms. Transaction platforms are two/multi-sided markets with an online infrastructure that supports exchanges between a number of different parties. They have become a core business model for major digital corporations (such as Amazon, Alibaba, Facebook and eBay), as well as for those that are supporting digitally enabled sectors (such as Uber, Didi Chuxing or Airbnb). Innovation platforms create environments for code and content producers to develop applications and software in the form of, for example, operating systems (e.g. Android or Linux) or technology standards (e.g. MPEG video).

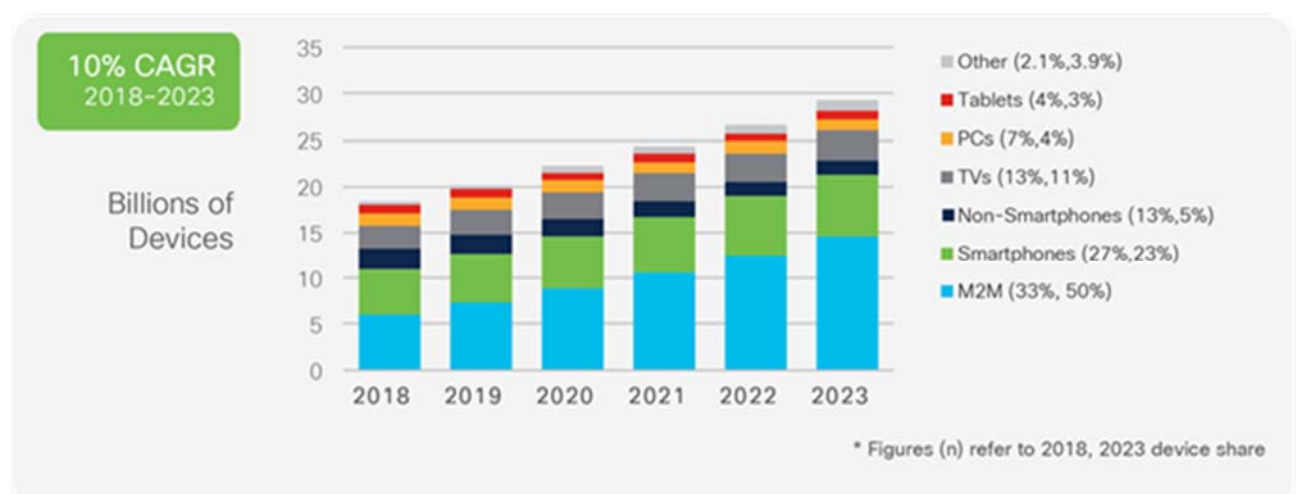


Figure 2 – Global device and connection growth

Source: [7]

Platform-centred businesses have a major advantage in the data-driven economy. As both intermediaries and infrastructures, they are positioned to record and extract all data related to online actions and interactions among users of the platform. The growth of digital platforms is directly linked to their capacity to collect and analyse digital data, but their interests and behavior depend greatly on how they monetize those data to generate revenue.

Digital platforms are increasingly important in the world economy. The combined value of the platform companies with a market capitalization of more than \$100 million was estimated at more than \$7 trillion in 2017 – 67 per cent higher than in 2015. Some global digital platforms have achieved very strong market positions in certain areas. For example, Google has some 90 per cent of the market for Internet searches. Facebook accounts for two thirds of the global social media market, and is the top social media platform in more than 90 per cent of the world's economies. Amazon boasts an almost 40 per cent share of the world's online retail activity, and its Amazon Web Services accounts for a similar share of the global cloud infrastructure services market. In China, WeChat (owned by Tencent) has more than one billion active users and, together with Alipay (Alibaba), its payment solution has captured virtually the entire Chinese market for mobile payments. Meanwhile, Alibaba has been estimated to have close to 60 per cent of the Chinese e-commerce market.

Several factors help explain the rapid rise to dominance of these digital giants. The first is related to network effects (i.e. the more users on a platform, the more valuable it becomes for everyone). The second is the platforms' ability to extract, control and analyse data. As with network effects, more users mean more data, and more data mean a stronger ability to outcompete potential rivals and capitalize on first-mover advantages. Thirdly, once a platform begins to gain traction and starts offering different

integrated services, the costs to users of switching to an alternative service provider start to increase.

Global digital platforms have taken steps to consolidate their competitive positions, including by acquiring potential competitors and expanding into complementary products or services. Major acquisitions by digital platform companies include Microsoft's takeover of LinkedIn and Facebook's acquisition of WhatsApp. Alphabet (Google) and Microsoft have invested in telecommunications equipment by acquiring Motorola and Nokia, respectively. Major platforms have also made other large acquisitions in the retail industry, advertising and marketing industry, and in non-residential real estate.

Other steps include investing strategically in research and development (R&D) and lobbying in domestic and international policy-making circles. At the same time, strategic partnering between multinational enterprises (MNEs) in traditional sectors and global digital platform corporations is also being explored. For example, Walmart has partnered with Google to use Google Assistant; Ford and Daimler have joined Baidu in its Apollo platform; Google has built the Android Automotive platform with Volvo and Audi; GE has partnered with Microsoft to use its Azure cloud services; and Intel and Facebook are collaborating on the development of a new artificial intelligence (AI) chip. [6].

For understanding why digital platforms are so important in modern life we must correctly define the term itself. In business literature the term "multi-sided platform" is used as well as platform and platform business model. One of the definitions comes from Professor Andrei Hagiu who defines Multi-sided platforms as: "Multi-sided platforms (MSPs) are technologies, products or services that create value primarily by enabling direct interactions between two or more customer or participant groups." [8]

There are a lot of different types of multi-sided platforms. On the Fig. 3 are presented some common categories and examples.

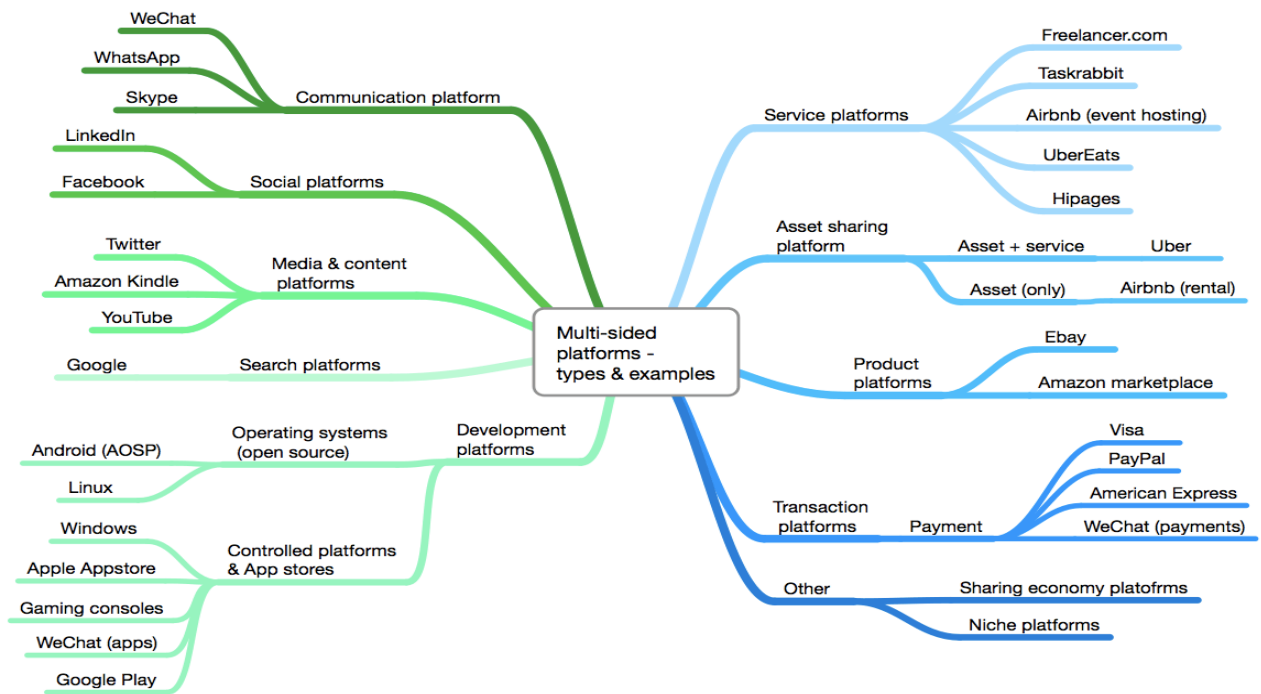


Figure 3 – Types of multi-sided platforms
 Source: [9]

It's important to remember that a platform is a business model, not just a piece of technology. A lot of people make the mistake of conflating a platform with a mobile app or a website, but a platform isn't just a piece of software. It's a holistic business model that creates value by bringing together consumers and producers. [10]

Traditional, non-platform companies are common called linear businesses, because their operations are well-described by the typical linear supply chain. Linear companies

create value in the form of goods or services and then sell them to someone downstream in their supply chain. [11] Linear Business: a business that takes in components, creates finished products/services and sells that good/service to consumers. The platform is solely focused on building and facilitating a network. Platforms don't own the means of production – instead, they create the means of connection.

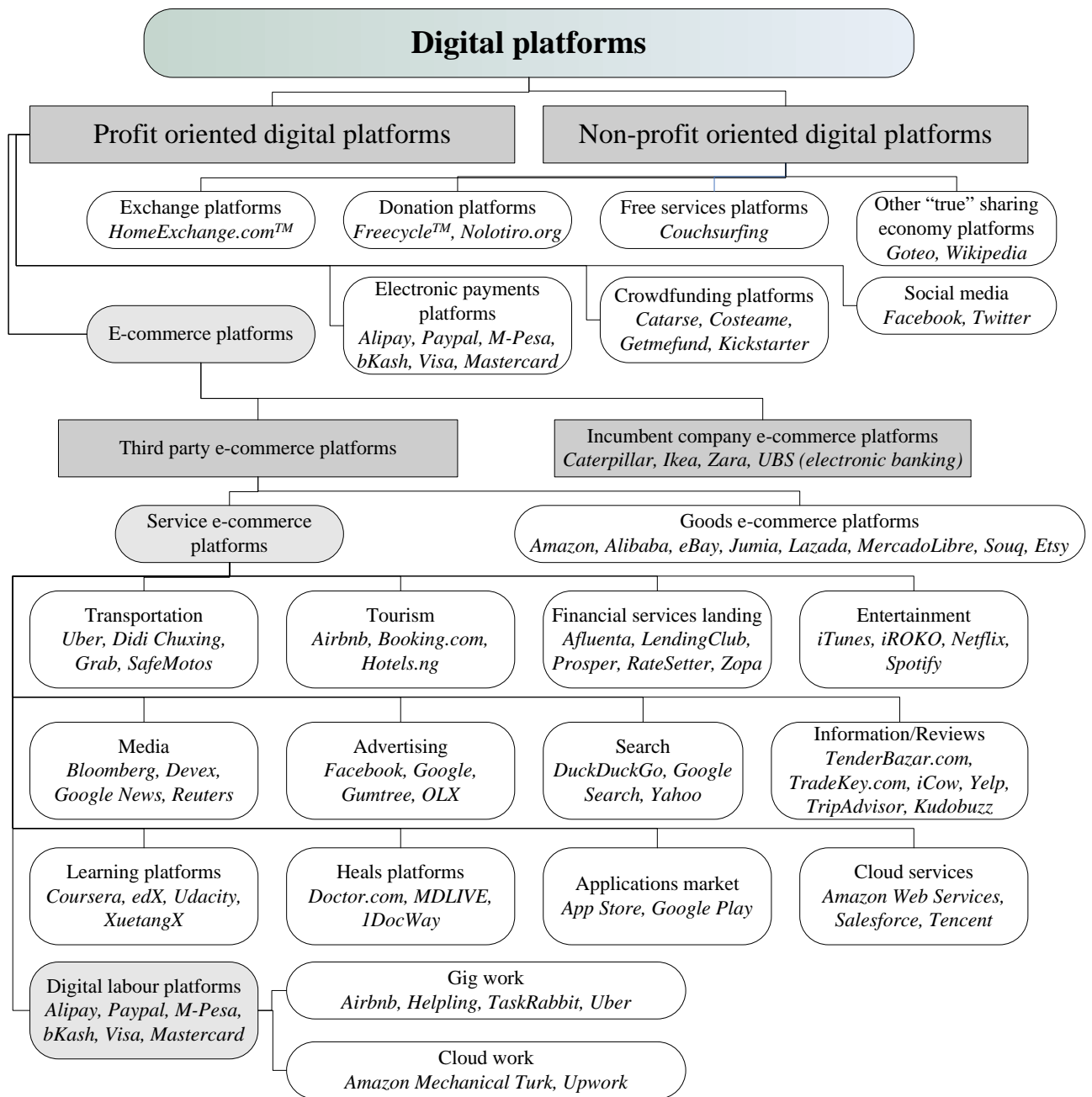


Figure 4 – Electronic commerce in the digital platforms landscape

Digital platforms are key in the evolving electronic commerce (e-commerce) and digital economy landscape. Their main characteristics include the provision of infrastructure to intermediate between different users; the reliance on network effects, as more users beget more users, leading to monopolistic trends; and the use of cross-subsidization. The most important value of such platforms stems from the data extracted from users that can be further analysed, used and monetized. Data have

become a valuable extractable resource in the digital economy. [12]

By reducing transaction and search costs, digital platforms enable those offering assets or services to connect more easily with those wishing to use or consume them. This has created potential opportunities for new trade types (in digitally traded products, services and tasks) and for more traditional trade using e-commerce and other online platforms to better match buyers and sellers and to make products more visible. Many

platforms provide access to free or paid services via the Internet to connect users, buyers and sellers, such as services related to logistics, payments, market research, trade compliance, market intelligence data, advertising, refunds and dispute resolution.

Digital platforms can allow for a more efficient utilization of physical assets and time. Often accessed through mobile applications, they aggregate and bring together supply and demand in ways that were not possible before. Digital platforms can also help to empower women entrepreneurs.

One way of illustrating this new digital platforms landscape is shown in the Fig. 4. Digital platforms are divided into two groups: profit-oriented and non-profit-oriented. The size of non-profit-oriented platforms is likely to be marginal compared with profit-oriented

platforms. Profit-oriented platforms can also be subdivided depending on their main business focus. Some examples of the different categories are provided. As some platforms are multipurpose, they may appear in several places.

Wealth creation in the digital economy is highly concentrated in the United States and China, with the rest of the world, especially countries in Africa and Latin America, trailing considerably far behind. [13]

The United States and China account for 75% of all patents related to blockchain technologies, 50% of global spending on the Internet of Things (IoT), more than 75% of the cloud computing market and as much as 90% per cent of the market capitalization value of the world's 70 largest digital platform companies (see Fig. 5).

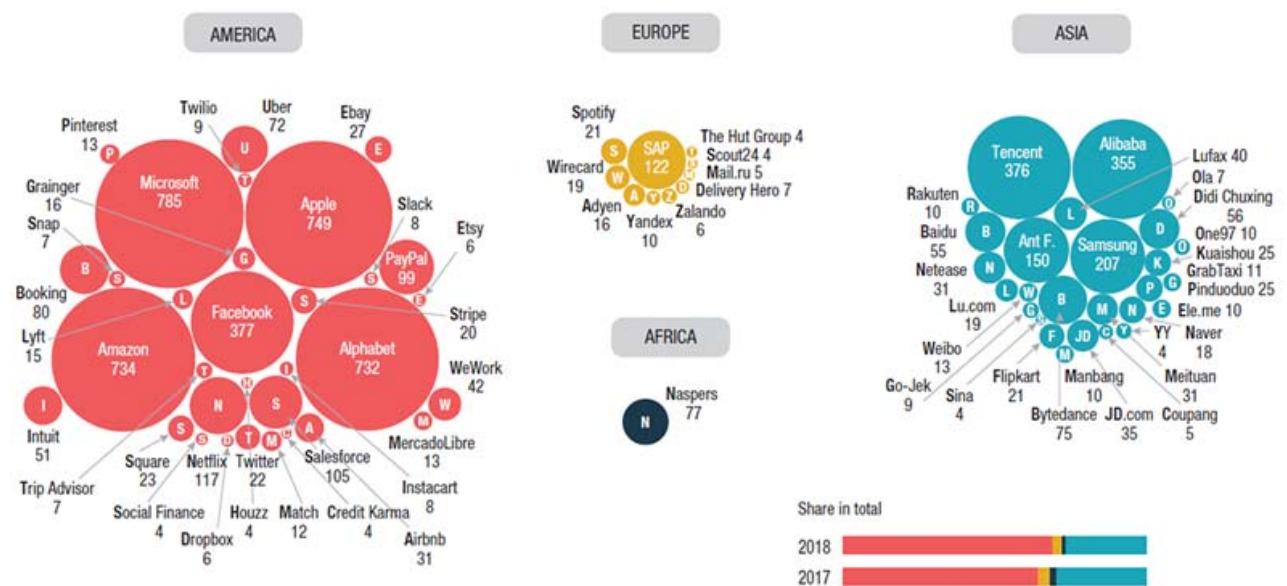


Figure 5 – Geographical distribution of the main global platforms in the world, 2018
 Source: [13]

The transformative power of data in the sphere of economic and social interactions means that governments, businesses, and people must adapt to use emerging opportunities and avoid traps and risks. The ability of countries and various stakeholders to master digital transformation varies greatly and depends on their level of development

and digital readiness. Developed countries are in many ways better equipped to deal with the growing role of digital platforms than countries with limited resources and capabilities. Limited availability may be due not only to underdeveloped communications and skills shortages or from technological, financial or logistical aspects, but problems

with local content creation and weak regulatory and institutional frameworks. There is a risk that the digital revolution will create benefits primarily for those who are already well equipped to create and retain value in the digital age, rather than contribute to more inclusive development. [14]

The world today is characterized by a wide gap between loosely coupled and hyper-digitalized countries. For example, only one in five people in least developed countries use the Internet, compared with four in five people in developed countries. Thus, while the situation is improving, there is still a lack of affordable and reliable digital communications in many developing countries.

In addition, many small business owners in developing countries, especially least developed countries, lack the necessary capabilities, skills and knowledge to take full advantage of the digital economy. Even if they have access to mobile phones or the Internet, they may not know how to effectively use such funds to grow their business.

In many developing countries, digital entrepreneurs have limited opportunities to develop basic digital technologies domestically and face various obstacles, especially if they seek to expand their activities. The main bottlenecks in the development of the digital ecosystem of entrepreneurship and innovation are a small and undemanding market, a lack of entrepreneurial knowledge and experience, a lack of qualified and inexpensive workforce, and limited access to finance.

The international ICT giant CISCO Company developed Global Digital Readiness Index. The Cisco GDRI has been created to help nations understand how well-positioned they are to take advantage of the benefits of digitization. A holistic view of digital readiness was taken, examining multiple factors that indicate the progress that a nation has made towards digital maturity, and demonstrating

areas of strength while providing guidance as to how they can invest to improve their overall readiness. [15]

A countries digital readiness score is determined by Cisco researchers examining countries against the seven components which are believed to indicate a countries ability to take advantage of digitisation. These components are:

–Basic Needs – this component is determined by life expectancy, mortality rate, population of people using safe drinking water and access to electricity.

–Business & Government Investment – this is evaluated by assessing the foreign direct investment, research and development expenditure, investment freedom.

–Ease of Doing Business – factors effecting this ranking include Rule of Law, Logistic Performance Index and Time to Get Electricity.

–Human Capital – this is ranked by evaluating labour force participation rate, adult literacy rate, education index and harmonised test score.

–Start-Up Environment – a countries ranking for this is determined by new business density, patents granted & trademarks registered and venture capital investment & availability.

–Technology Adoption – mobile device penetration, internet usage and cloud services.

–Technology Infrastructure – mobile broadband subscriptions, fixed broadband subscriptions, secure internet servers and household internet access.

The overall average readiness score for 2019 year's report was 11.90. No country obtained a perfect score on any of the seven components examined. The analysis revealed three stages of digital readiness - Amplify, Accelerate, and Activate - based on their score's distance from the average result (see Fig. 6).

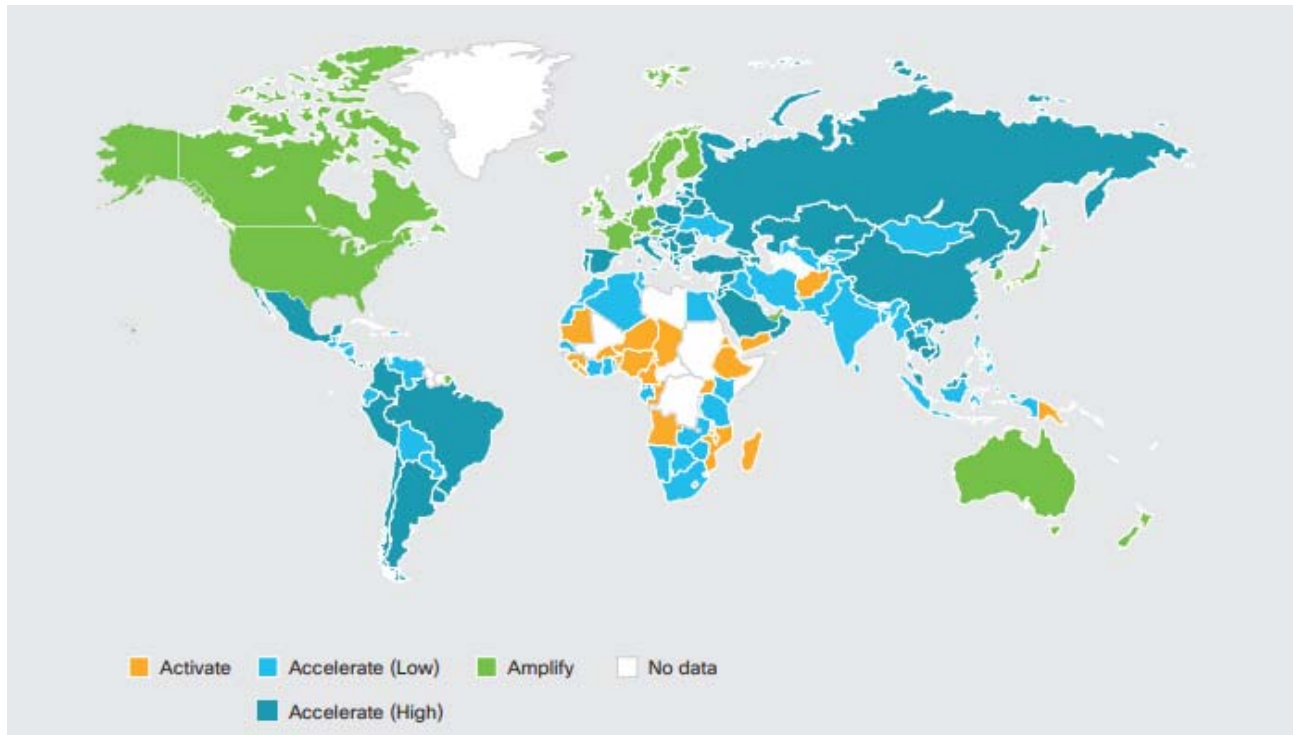


Figure 6 – The world map of digital readiness stages

Source: [15]

Accordingly to Cisco Global Digital Readiness Index 2019 the overall top five countries are:

1. Singapore – scored 20.26;
2. Luxembourg – scored 19.54;
3. United States – scored 19.03;
4. Denmark – scored 18.98;
5. Switzerland – scored 18.86.

In 2019 Ukraine is on the stage Accelerate with GDRI 11.47. The score of Ukraine in world rank is 77th from 141 countries and it is between Botswana (76th) and South Africa (78th). The strongest components are Basic Needs (3,54 from 4) and Human Capital (2,79 from 4). The weakest components are Start-Up Environment (0,26 from 3) and Business and Government Investment (0,92 from 3).

It should be noted that in 2018 Ukrainian score of GDREI was 12.36.

Platformization is happening in all areas of business, but let's take a closer look at the aviation industry. Air transport is central to world tourism and trade. Tourists traveling internationally by air are estimated to have

spent about \$850 billion in 2018, an increase of more than 10% over 2017. [16]

The aviation, travel and tourism industry has been at the forefront of digital innovation, but industry and technology trends suggest that further change lies ahead. The sector has been an early adopter of digital technologies and platforms, but steep demand for travel, driven by a growing middle class in emerging markets and the increasing importance of digital experiences, implies that further digitalization will be vital if the expectations of tomorrow's consumers are to be met. [17]

The travel ecosystem (see Fig.7) has helped shape customer expectations for on-demand and convenient services through digital innovation, both within and across industry boundaries. The next step is for organizations that are lagging behind to change how they work, so that they too can capture the opportunities that digital transformation presents.

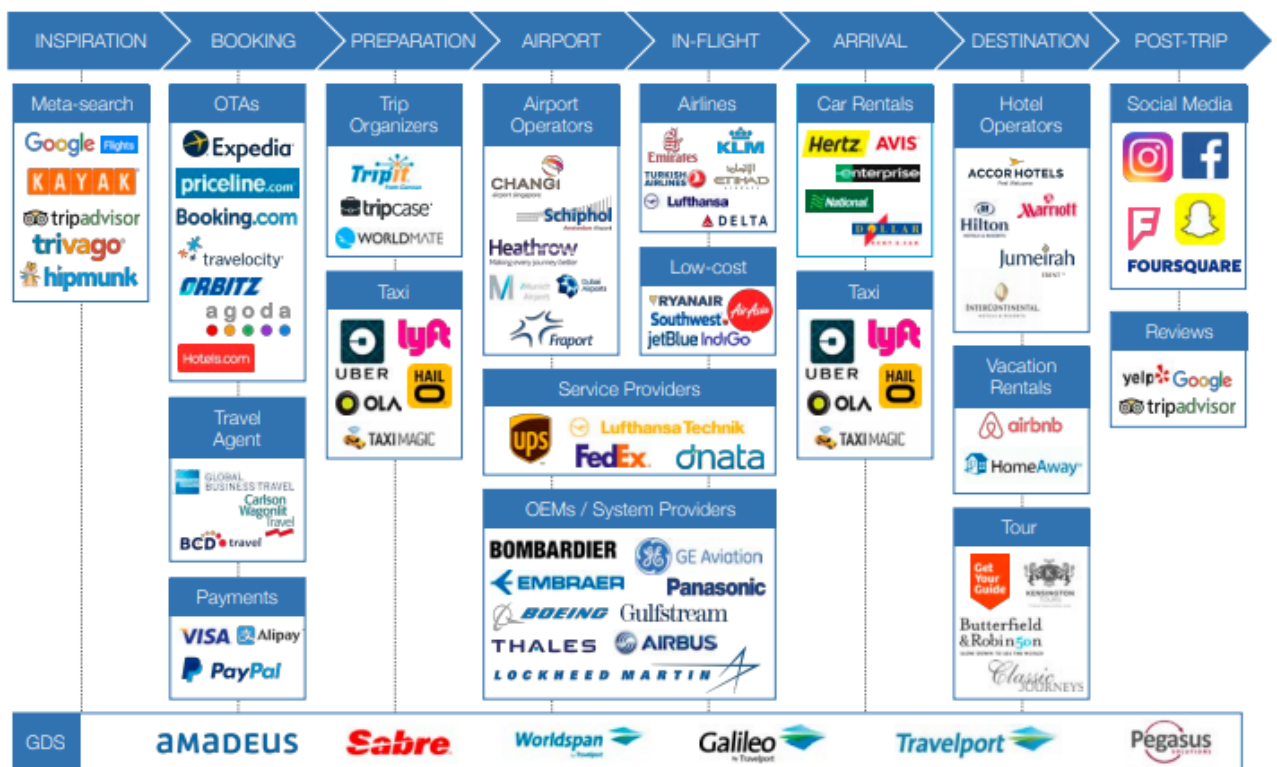


Figure 7. The aviation, Travel and Tourism Ecosystem
 Source: [17]

For the aviation industry, the channels through which aviation enterprises market their services to customers are vital. Making airline offers available through a range of booking channels and methods is critical to reaching consumers. Airline websites are not the first place passengers search. When they are booking more than just flights,

metasearch alone is not enough. Millennials are still turning to travel agents. [18]

Figure 8 shows what is most important for a potential passenger when choosing an air flight and where searches take place.

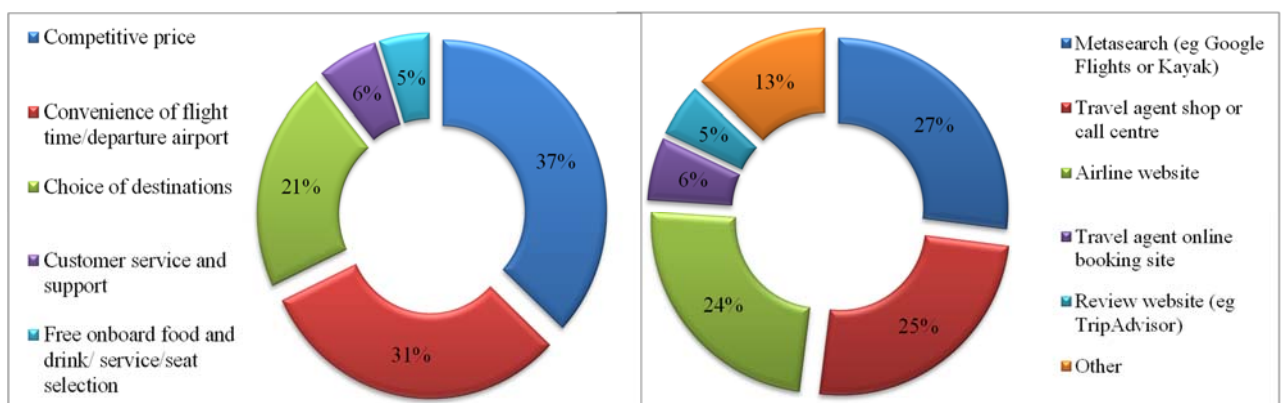


Figure 8 – The most important component for passenger when choosing airlines and first place they visit when searching for flights
 Source: developed by own, based on data from [18]

There are a lot of platforms for flight searching (see Fig. 9).



Figure 9 – Flight metasearch

These platforms offer not only flight search, but also hotel and car rental selection. But as experienced travelers note, on such search engines, flights of local airlines may often not be represented. So choosing the optimal flight may take some time.

On the other hand, information is becoming the most important resource today. In recent years, the market for data analysis and predictive analytics within the aviation industry has significantly matured. Consider several aviation data platforms that are pushing for market dominance or looking to reshape areas of the industry that are lagging in digitization.

Skywise. The platform is built to collect, aggregate, and share airline data from work orders, spares consumption, component data, fleet configuration, sensor data and flight schedules. Additional data sources traditionally shared with Airbus and hosted only on isolated servers—such as aircraft condition monitoring reports, parts replacements, on-board aircraft data and technical documentation—can be integrated into the platform and combine with the full scope of platform data to allow operators a broader range of analysis and decision-making. [5 aviation data platforms to keep your eye on. SatAir. URL:

<https://blog.satair.com/5-aviation-data-platforms-to-keep-your-eye-on>]

The platform is used by over 100+ airlines all across the globe, contributing to a vast and industry-wide data pool from which airlines and operators can utilise in the operations.

Honeywell Forge. The data analytics platform Honeywell Forge spans across several industries but was released for the aviation industry in 2019.

The platform provided predictive health monitoring capabilities through the collection, cleaning and analysis of streams of diverse data. This data is collected and aggregated based on its source—for example, aircraft, airport, government or general Honeywell sources.

The platform promises real-time insights and aircraft health data to improve an airline's understanding of its fleet, profitability and passenger experience.

AVIATAR. Lufthansa Technik, one of the world's leading MROs (Maintenance, Repair and Overhaul), is on the front line of innovation and well on the road to what's becoming known as MRO 4.0.

The company made waves when they launched their cloud-based digital aviation platform AVIATOR in 2017, and the progress on the project has been ramping up ever

since. What started after an 18 month development period, and launched with seven apps that covered things like fault analytics, condition monitoring, and performance metrics, has grown into fully fleshed out aircraft health monitoring system which provides real-time support for complex fleet management and forecasting.

Contrary to the "under-lock-and-key" culture that is more common throughout the industry, AVAITAR allows more personal freedom with how it is used, even going so far as making a software development kit available to all airlines and potential partners.

Flight Deck. Beep Analytics' Flight Deck platform aims to compile a lot of data that originates from the supplier itself—data that relates to the aircraft, who are the MROs that are working on the components, how much aircraft is flying, etc.

This aviation data platform then aggregates and sorts all the data. It blends all the information together, to create insights on how the marketplace for a supplier looks. It shows what parts of the market the supplier is covering, and what part of the market they are not and could expand into.

It also shows who the competitors are, and where their strengths and weaknesses are—in regards to covering the aftermarket. It helps them to build the background data that they need to do better supply chain planning.

Enspan. Development on this supply chain digital ecosystem began as Parts Pedigree in partnership with Deloitte in 2018. Since then, the company, now called Enspan, has expanded its focus to encompass more supply chain industries, but narrows the focus of its Parts Pedigree solution is what they described as "mobile app solution that provides parts history, track and trace capability and stores digital documentation on a part chronology which creates a 'digital logistical twin.'"

And these are just some examples of digital platforms in the aviation industry. If the

existing trends continue, then every day they will become more and more, with new aims and, possibly, new technologies.

Conclusion. Today it is taken for granted that the world is moving to digital reality. Information is becoming one of the world's main resources, and ways of monetizing it play a decisive role for business. The digital data and platforms are drivers of digitalization. The idea of platforms is far from new, it has its origins in ancient markets and bazaars. But now platforms became digital. Digital platforms are online businesses that facilitate commercial interactions between at least two different groups—with one typically being suppliers and the other consumers. Platforms have grown for several reasons, including increases in Internet adoption, the maturation of the online advertising industry, and the growth of cloud computing. A rapid rise in smartphone ownership also has provided consumers greater access to platforms.

Digital platforms enable much of the digital economy. Globally, platform companies have a combined market capitalization of \$2.6 trillion [19], and they have a wide-ranging impact on businesses, workers, and consumers. Digital platforms make it easier for companies to find customers, monetize underutilized assets, and reduce transaction costs. Digital platforms have many pro-competitive effects, such as reducing barriers to entry and making it easier for small, flexible suppliers to reach consumers. By reducing the fixed costs needed to participate in the market, digital platforms also reduce prices and increase consumer choice.

The aviation industry certainly does not stand aside from today's digital transformation. The ability of new technologies to aggregate customer data, combined with a constantly connected consumer base, provides incredible potential.

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