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Chapter 9
CONTEMPORARY RESTRUCTURING (RE-ENGINEERING) OF BUSINESS PROCESSES AT TRANSITION TO ELECTRONIC SERVICES RENDERING

Content

9.1. E-services in the restructuring of digital economy business processes

Electronic services provision is first of all connected with the state, therefore, while characterizing them we will focus special attention on services in the field of public administration. With the development of new technologies, a rethinking of approaches to governance and responsibility begins, relations between players change: between service providers and manufacturers; between public, private and third sectors and between authorities and citizens. New forms of governance

are emerging, reflecting the change of organizational and economic relationships, with profound implications for use by citizens and businesses.

It was digital economy development that caused the need to build online communications between business, citizens and the state. Widespread ICT and Internet enabled the emergence of electronic services.

E-services concept is quite young, it has only been used for 20 years, but there are already many definitions of it. In a general sense, an electronic service can be understood as a service provided through the Internet using ICT. Separate interpretations of "electronic services" concept are given in Table 9.1.

***Table 9.1* – The views of scientists and practitioners regarding the content of "electronic service" concept**

Author	Definition of the term "electronic service"
Beznaziuk O.	An electronic administrative service is an administrative service provided in whole or in part through online services
Borysov I.V.	Electronic services are services provided through the informational telecommunication system and do not constitute a separate type in the system of contracts for the services provision.
Kovalskyi V.	Electronic services are services provided via the Internet, automatically, with the help of information technologies and mainly without human intervention, including by installing a special application on smartphones, tablets, television receivers or other digital devices.
Matviichuk R.M., Kandziuba S.P.	An electronic service is a service created to meet the user's information needs, which has an electronic form of provision.
Tyshchenkova I.O.	Electronic services in the activity of public administration should be understood as legal relations that arise thanks to ICT regarding the subjective rights realization of a natural or legal person, mainly at their request in the process of public administration's public-authority activity.

Source: complied by the author.

Therefore, a peculiarity of electronic public services is the use of ICT and the Internet in their provision. As a type of public service, electronic services have certain characteristics:

1) legal regulation;

2) mandatory recognition and provision;

3) direct participation of public authorities and public institutions in the services' provision;

4) service continuity and its availability for everybody.

Among the main features of services in the conditions of digital technologies development, scientists single out the following:

1) the service is always expressed through the active actions of the legal relations participants;

2) the service provided by the contractor is able to satisfy the needs of the customer;

3) lack of material nature;

4) synchronicity of providing and receiving services (are consumed in the process of their provision);

5) the service must meet the requirements specified in the contract or regulatory act;

6) the possibility of remote services provision – the use of ICT in the services provision.

In Ukraine, the concept of electronic service is defined at the legislative level. The normative definition of the term "electronic services" is presented in Table 9.2.

***Table 9.2* – Normative definition of "electronic services" concept**

Legislative and normative acts	**Definition of the term "electronic service"**
1	*2*
Law of Ukraine "About electronic confidential services"	An electronic service is any service provided through an information and communication system.
Law of Ukraine "On e-commerce"	Electronic information services – paid or free services related to information processing and storage, provided remotely using information and communication systems at the individual request of their recipient.
Law of Ukraine "On the peculiarities of public (electronic public) services provision"	Electronic public service – a service provided by state authorities, local self-government bodies, enterprises, institutions, organizations that are under their management, including an administrative service (including automatic mode), which is provided using information and telecommunication systems on the basis of an application (appeal, request) submitted in electronic form using information and telecommunication systems (including using the website of the Unified State Electronic Services Portal), or without submitting such an application (appeal, request).

Continuation of Table 9.2

1	*2*
Tax Code of Ukraine	Electronic services are services provided via the Internet, automatically, with the help of information technologies and mainly without human intervention, including by installing a special application on smartphones, tablets, television receivers or other digital devices.
The Concept of Development of the a-Services System in Ukraine	Electronic service – administrative and other public service provided to the subject of the appeal in electronic form using the means of information, telecommunications, information and telecommunications systems.

Source: complied by the author.

In fact, the state established the essence of electronic services (e-services) as those provided to the consumer in electronic form with the help of ICT. The question arose: "What exactly should be considered electronic services?". The Tax Code of Ukraine defines the list of transactions that belong to electronic services and those that are not classified as such (Appendix A).

The concept of e-services includes not only administrative services provided in electronic form, but also other services that do not belong to administrative. In particular, such other e-services can be online registration in the e-queue for kindergarten or for a doctor's appointment, registration in the queue for vaccination against COVID-19, etc.

Here are generalized approaches to the electronic services classification [1]:

1) by the content of electronic services provision (informing, one-way interaction, two-way interaction, conducting transactions);

2) by the field of activity: informational services; consulting services;

3) services related to interaction between public administration subjects; assistance and support services;

4) by subject of provision: those provided by central executive authorities, regional representatives of the government, local self-government bodies and subjects of delegated powers;

5) by the place of receipt: "single window"; the official web portal of the authority;

6) by the form of receipt: fully automated and partially automated;

7) by the result they can both provide for the execution of an administrative act and not provide for its execution;

8) by consumers: electronic services for public authorities, citizens and business organizations B2B (Business-to-Business); B2C (Business-to-Citizens); G2B (Government-to-Business); G2C (Government-to-Citizens); G2G (Government-to-Government); C2C (Citizens-to-Citizens).

Scientists recognize that the goal of providing e-services is the creation of simpler conditions and more effective relations for citizens and public institutions regarding:

– information exchange (requests of citizens about the activity and work of public institutions, conducting a population census, etc);

– public services provision (at individual requests of citizens or through information systems);

– the control or introduction of restrictions, usually initiated by the state and involving the introduction of restrictions on certain behavior (for example, the imposition of penalties, the collection of taxes).

Today, the concept of "electronic services" is gradually being replaced by the term "digital services". At the same time, the very interpretation of these services is expanding, because if "electronic services" are concentrated in the field of public administration, then "digital services" cover all online services. The development of digital services and digital markets is defined as a priority of the European Union. In April 2022, the European Parliament agreed and approved the draft Digital Services Act (DSA), which will enter into force on January 1, 2024 and is aimed at establishing fundamentally new rules of the game in the online space.

The law interprets "digital services" much more broadly than "electronic services", as the DSA rules will apply to four main categories of online space participants: companies providing online intermediary services; companies providing hosting services; online platforms; very large or super large online

platforms. The main tasks of DSA, as defined by the European Commission: to improve the defense mechanism of users' rights on the Internet; to protect against unsolicited advertising; to reduce the amount of illegal content on the Internet; to expand digital services for online market participants in the EU; to prevent the abuse of "Internet power" by super large platforms that cover an audience of more than 10 % of the EU population; to contribute to the growth and expansion of competition in the online market [2].

That is, digital services include the ability to receive any service on the Internet through social networks; search engines; online market (marketplaces).

It should be noted that the Ministry of Digital Transformation of Ukraine announces the development of digital services in our country as well. The perspective development of digital Ukraine – the digitalization of the service sector is outlined in conceptual and strategic documents, in particular in the Concept of the Digital Economy Development and Society of Ukraine for 2018–2020, which provided for the introduction of measures to implement incentives for the socio-economic processes digitalization, digital competences acquisition by citizens. Currently, the main strategic document is the National Economic Strategy 2030, in which one of the strategic courses of the economic policy until 2030 is the "Digital Economy" direction.

The directions of Ukraine's regions digital transformation are defined in the State Strategy of Regional Development 2021–2027 (2019). Among the main priorities of regional development, the following are highlighted: improving the quality and ensuring the availability of administrative services for the population, developing infrastructure and digital transformation of regions. At the regional level, there is a practice of approving Digital Development Programs. Thus, the Digital Development Program 2021–2025 was approved in Khmelnytskyi at the end of 2020. The program is aimed at implementing the policy of informatization, digitization, digital development, digital innovations, e-government, e-democracy, creation of effective management mechanisms using modern ICT.

You need to have certain knowledge and skills to effectively provide and use digital services. Back in 2013, the European Commission launched a scientific project on the development of a digital competence system for citizens DigComp (DigComp – The Digital Competence Framework for Citizen). In 2016, the Digital Competence Framework for Citizen DigComp 2.0 was published, and in 2017 its format was updated – DigComp 2.1. In addition to the European Digital Competence Framework for Citizens DigComp 2.1, were adopted pan-European Digital Competence Framework: for teachers (DigCompEdu, 2017) and higher education institutions (DigCompOrg, 2015). In 2021, the Ukrainian government adopted the national Concept for the digital competences development, the main purpose of which is to define priority directions and tasks for the digital skills development and digital competences of various employees' categories, graduates of educational institutions, and citizens. Ukrainian experts adapted the DigComp 2.1 conceptual reference model of digital competences to the peculiarities of Ukraine, taking into account the recommendations of European and international institutions, and in 2021 a description of the Digital Competence Framework for Ukrainian citizens was published.

The development of electronic and digital services is greatly facilitated by the formation and deployment of digital platforms. The European Commission has defined a digital platform as an enterprise that operates in bilateral and multilateral markets and that uses the Internet to enable interaction between two or more individual, interdependent groups of users [3]. A European Parliament study proposed a broader definition, according to which a digital platform provides a technological basis for the provision or aggregation of services (content) from service providers (content) to end-users [4]. The tasks of the platforms are defined as creating value for all users of the platform, maintaining connections between its users and facilitating the exchange of information, values, products, services, works.

Four main types of platform participants are: platform owners, providers

(managers), developers and independent end-users (consumers, suppliers) [5, p. 444].

The following models of digital platforms monetization in relation to the consumer are distinguished [6, p. 59]:

1. **Free platform** – provides free services. It is worth highlighting two models of financing the operation of the platform:

1) for state platforms – at the expense of the state budget, various funds, grants, donor organizations (DIIA);

2) for commercial platforms – monetization can occur by delivering advertising content to users (Facebook).

2**. Shareware platform** – provides free services in the basic version, the user pays for the advanced format (Spotify).

3. **Charge of commission** – receiving a commission on each transaction (eBay, Uber).

4. **Access fee** – payment of information on the platform (Science Direct, paid electronic mass media).

5. **Differentiated access fee** – only a part of users who are more interested in platform services pay for access (dating sites).

The diversity of areas in which platforms arise allows you to receive an electronic or digital service of any nature: educational services (Buki, Coursera), logistic services (Lardi Trans), sale and purchase of goods (Amazon, OLX, Prom, Rozetka), courier services, performance of various tasks and services provision (kabanchik.ua), finance services (purchase of insurance through Privat24), state services (Prozorro, Diia).

Economically, a digital platform is the implementation of a multi-marketplace model, where supply and demand are coordinated, transaction costs are optimized, and a transition from unification to total aggregation of all possible goods and services is performed. There are several models of digital platforms communication (Table 9.3).

Table 9.3 – **Basic communication models for the digital platform's formation**

Subject (Manufacturer of goods and services)	Object (Consumers of goods and services)		
	Business	**Consumers (households)**	**Government**
Business	Business to business model (B2B). Electronic commercial services	Business to consumer model (B2C). Online stores (e.g.: Alibaba, Amazon)	Business to Government model (B2G). Electronic public procurements
Consumers (households)	Customer to business model (C2B). Contextual business advertising and electronic labor exchanges (e.g.: Google AdSense; Work.ua.)	Customer to Customer model (C2C). Digital platforms for joint consumption (e.g.: blablacar; Airbnb; eBay).	Customer to Government model (C2G). Digital platforms for submitting petitions
Government	Government-to Business model (G2B). Government services for business.	Government to Consumer model (G2C), State services for citizens.	Government to Government model (G2G). E-Government.

Source: [7].

Thus, platforms may have different functionality, but most of them have similar features:

1) multilateralism – the ability to coordinate different groups of users, for example, buyers and sellers;

2) the presence of network effects, which consist in increasing the value of the platform for a group of participants as its number increases;

3) the presence of a unique ecosystem (combination of companies that develop the platform);

5) the presence of applications that are the main software;

6) limited resources provision consisting of software and regulators that facilitate close cooperation of users;

7) degree of openness and availability of software interfaces and development tools [8, p. 60].

Depending on the subjects and their role in the creation and regulation of the platform, the latter are divided into public (state) – platforms created and regulated

by state bodies, the users of which can also be commercial participants; private (commercial) – founded by a private business, providing services to both private and public participants.

State (public) digital platforms, unlike private ones, are established by the state represented by state bodies. The functioning of such a platform is determined by a state regulatory legal act of the appropriate level, which establishes the order of activity and management, defines the participants of the platform, the purpose and tasks. The digital platform is managed by an authorized state body (platform operator). The activity of state digital platforms is limited by the territory of the state.

The state digital platform, unlike private ones, does not aim to make a profit, because it is created by the state with the aim of increasing the efficiency of the public services provision through the digitization of interaction processes with their consumers.

Questions for self-control:

1. Define the content of the electronic services.
2. What are the main characteristics of electronic services?
3. Characterize the Ukrainian legislative base of the regulation of electronic services.
4. Generalize approaches to the electronic services classification.
5. What is the difference between the terms “electronic services” and “digital services”?
6. Distinguish the models of digital platforms monetization concerning the consumer.
7. Describe the basic communication models for the digital platform’s formation.

9.2. World experience in the introduction of e-services

Let's consider several case studies on the introduction of e-services and features of digital business processes development in different countries.

Case 1. One of the leading places in the world and the EU in the provision of electronic business services is occupied by *Estonia*. It has invested heavily in its own developers and gained significant experience that can already be capitalized. Currently, Estonia is a powerful digital state with high GDP per capita.

The country has succeeded in introducing e-government and citizens receiving individual ID cards in 2002, which provide an opportunity to use state-administrative, medical, financial, educational services, public transport and libraries, get insurance, travel and vote online. Due to the ID card, Estonia saves 2 % of GDP and allows providing services in a convenient format for citizens. Currently, Estonians use the Mobile-ID identity card (personal identification through a SIM card).

The most important event in the development of electronic interaction in Estonia was the X-Road program, which manages requests between unrelated computing environments and is an integrated data exchange system [9]. Due to it, almost all administrative services are provided online in Estonia. As of 2022, almost 67 % of Estonian citizens use an ID card regularly, also 99 % of administrative services are presented online and 2,773 services are subject to the X-Road system.

There is also an eTaxBoard system in Estonia, which helps citizens fill a tax return, refund VAT and monitor its return [10]. In 2014, the Estonian government launched the e-residency digital project, due to which every EU citizen residing outside Estonia can open a company in this country. Since every digital transaction is taxed, the government has revenue from it.

Estonia became the first European country to hold electronic parliamentary elections in 2007 ("eGovernment Award" Best Practice Label) [11].

Unemployed citizens can search for vacancies through national and regional employment services remotely. Social benefits and vehicles are made and registered online as well (Estonian Motor Vehicle Registration Centre).

One of the results of electronic business effective provision services was the formation of a startup ecosystem. There is a Startup Estonia platform, which continuously reboots the startup ecosystem. The country has the largest number of "unicorns" per capita in Europe: Pipedrive.com, Zego.com, ID.me, Skype.com, Playtech.com, Wise.com, Bolt. Let's consider the basis, factors, goals of the formation and provision of electronic services in Estonia (Fig. 9.1).

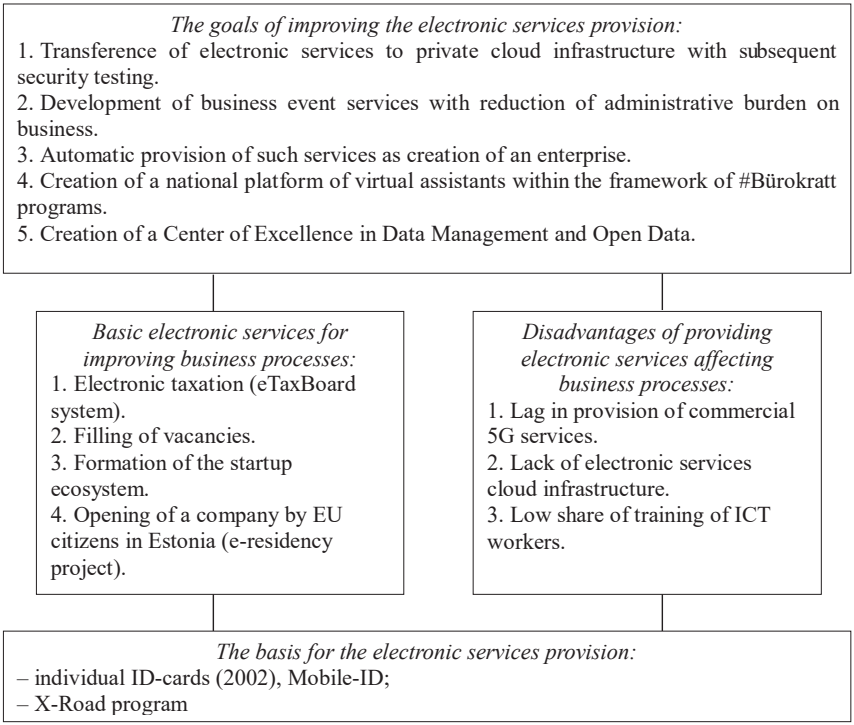


Fig. 9.1 – Peculiarities of electronic services provision in Estonia

Source: [10].

Estonia's new digital strategy until 2030 has been adopted. It is based on large-scale goals in the field of digital services, connectivity and cyber security.

The state plans to train an additional 7,000 specialists in the field of ICT, by 2027. To date, Estonia lags behind in the provision of commercial 5G services, but there is a goal to cover large cities by 2023, and to create transport corridors by 2025. 47 % of all actions to support digital transformation in the Strategy will be aimed at further digitalization of public services (budget of 97,43 million euros) [12].

Case 2. The formation of the electronic service provision system in *Sweden* began at the end of the 20th century, when the Swedish government launched the Government eLink project, which consisted in the secure information exchange between government institutions and customers of their services [13].

Later, the State Administration Modernization Strategy was presented. Later, the State Administration Modernization Strategy was presented. Its essence lies in a greater focus on the needs of citizens and defines information and communication technologies as the most important tool for improving public services. At the same time, the "Information Society for All" initiative was adopted, which consisted in strengthening Sweden's position as one of the leading countries in the information society and using the potential of information and communication technologies to stimulate growth, employment, regional development, democracy, fair treatment, quality of life, equality and effective public administration, which was a significant contribution to the development of Sweden's information society [14].

In 2000, the report "Agency 24/7 – Criteria for 24/7 agencies in public administration network" was published and Sweden became the first country in Europe to introduce round-the-clock provision of administrative services.

Among the principles of providing electronic services in Sweden, the following can be distinguished: confidentiality and security of information; ease of use and transparency; providing services 24/7.

Since 2017, the Swedish government has launched a new Digital Strategy, which is still in effect (Fig. 9.2). The strategy established a number of goals: digital literacy, digital security, digital innovations, digital leadership, digital

infrastructure.

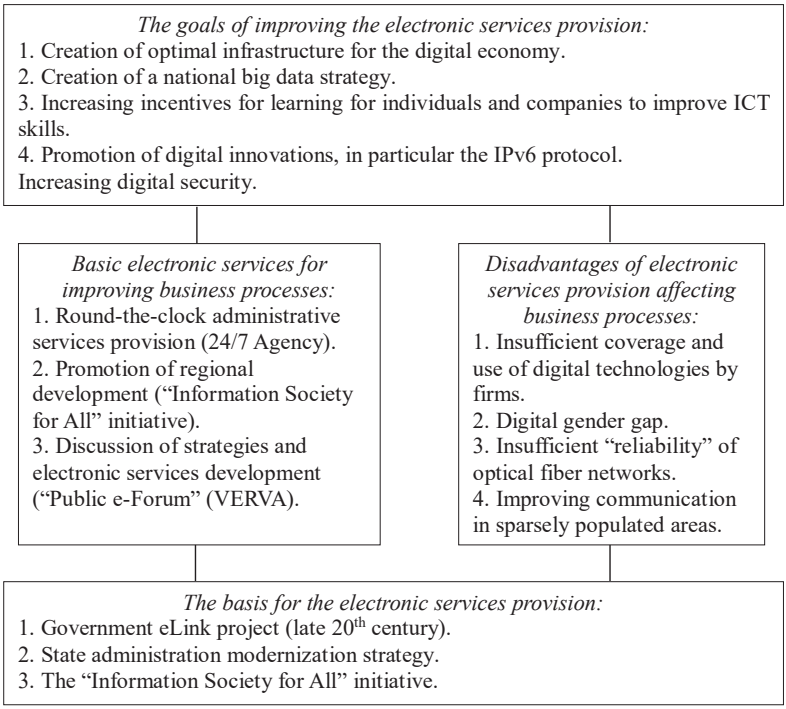


Fig. 9.2 – Peculiarities of electronic services provision in Sweden

Source: [14–15].

The coverage and use of digital technologies can be further increased by: promoting ICT courses in education; coordination of retraining activities with social partners; promoting additional investment across sectors and companies; developing complementary skills in a comprehensive digital skills strategy.

The National Cybersecurity Strategy 2017 marks a turning point towards a more holistic approach to digital security in Sweden.

Digitalization actively affects the improvement of business processes in Sweden. For example, Swedish forestry companies today are actively investing in digital technologies to improve production quality management and optimize supply chains. The application of analytics, artificial intelligence and IT process management are becoming strategically important tools affecting sustainable

forest exploitation and timber trade.

Case 3. *Singapore* is the founder and chair of the Global Governance Group, an informal bloc of 30 small and medium-sized countries that seeks to strengthen engagement between the G-20 and the rest of the world to support multilateral cooperation and collaboration. The G-20 community is promoting e-government as part of the UN's Sustainable Development Goals: "industry, innovation and infrastructure". In 2017, the leaders of the bloc have committed to reduce the gap in the development of digital infrastructure between countries with more technological resources and low-income countries by 2025, as well as to promote international digitalization standards in accordance with the principles of openness, transparency and consensus.

In the case of Singapore, the government began to promote the computerization of the civil service in the early 1980s. The government's understanding of IT's primary role in modern world led to the creation of strategic program:

1. The program of the state civil service computerization (1981).
2. National plan for information technologies (1986).
3. IT plan 2000 (Intelligent Island) (1991).
4. Creation of a nationwide broadband network for the provision of multimedia interactive services Singapore ONE (One Network for Everyone) – "One Network for Everyone" (1996).
5. "Basic ICT plan 21" (2001).
6. The first national IT-literacy program (2001).

Accelerated construction of advanced information infrastructure has reduced time of services provision and ensured secure virtual access in times of crisis such as the COVID-19 pandemic [16].

In 2007, the government launched the Singapore Government Enterprise Architecture (SGEA) program. The Singapore Government Enterprise Architecture was developed by the Ministry of Finance and the Infocomm

Development Authority (IDA):

– Business Reference Model (BRM);

– Data Reference Model (DRM);

– Technical Reference Model (TRM);

– Solutions Reference Model (SRM).

Singapore's electronic networks are used by enterprise to improve business processes. This is the trade network TradeNet (the process ofdocuments passing takes 3 minutes), marine network – MarineNet, port network – PortNet and the electronic system for judicial documents accounting – Electronic Filling System.

For business entities, the e-Citizen portal provides access to electronic forms of tax and other payments, to the system of electronic public procurement. Here you can register a trademark or a patent, get information about various government programs for business support and development, preferential credit schemes, consulting and training, especially those related to small and medium-sized enterprises. Such a unified approach significantly increases the efficiency of business processes. In the field of trade, the government has already created the legal system and regulatory mechanisms necessary for e-commerce.

Singapore was the first in the world to implement the idea of a government portal [17] – the "Electronic Government" program operates on a single government website *(http://www.egov.gov.sg/)*. The server supports several sections:

– business;

– defense;

– education;

– employment;

– health;

– law and order, etc.

Public e-help centers have been created; e-lifestyle is being formed: e-learning, e-entertainment, e-communication, e-interaction (Fig. 9.3).

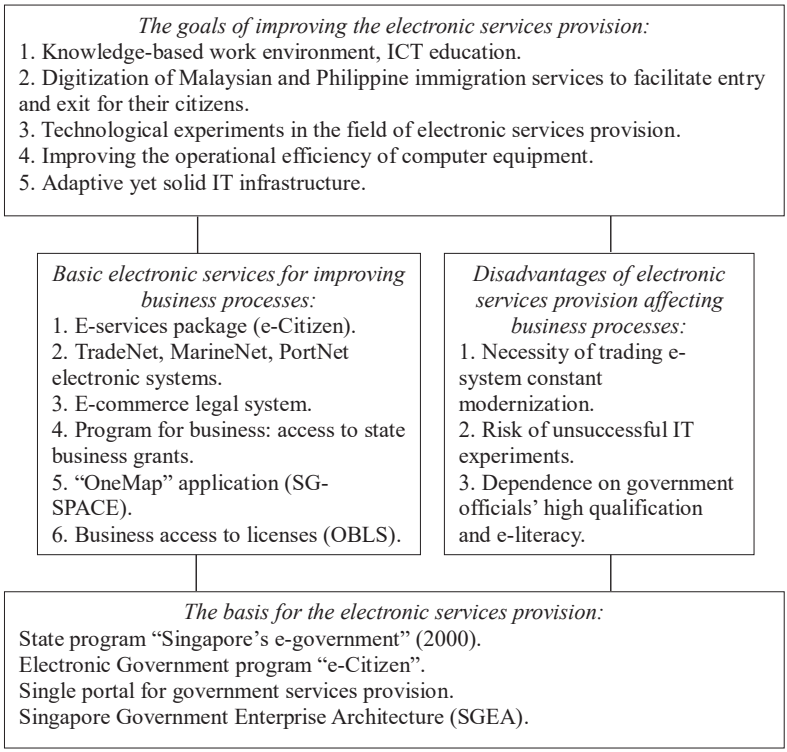


Fig. 9.3. Peculiarities of electronic services provision in Singapore

Source: [18].

Therefore, the large-scale implementation of the general service technological architecture allowed to improve the electronic services provision according to the following steps (Fig. 9.4):

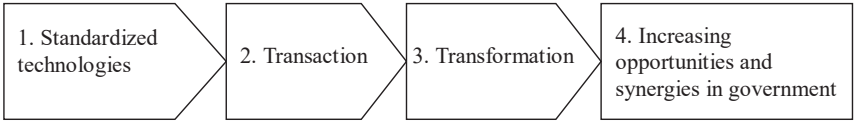


Fig. 9.4 – Steps to implementation of the general service technological architecture of electronic services provision in Singapore

Source: [16].

Since 2015, the government has not developed official strategic plans for the development of eGov, considering there are already built-in stabilizers in the

digitalization policy and electronic services provision. At the same time, IDA (Infocomm Development Authority of Singapore) is the senior technology and information assistant of the Singapore government [18].

Case 4. *The United States of America* launched a digital services program in the 1990s. In 2003–2010, according to the Electronic Government Development Index, the country was among the top ten in the world. In 2000–2008, the share of US government websites providing electronic services increased from 22 % to 89 %. At the same time, Internet penetration doubled.

In the USA, the E-government Act was signed in 2002, the Open Government Directive was signed in 2009, and the initiative "Creating electronic government of the 21st century" was introduced in 2012. Digital services were planned to be improved by using data more efficiently, so the US Digital Service (USDS) was formed. In 2021, a second decree was signed to improve service to electronic services users – "Improving Federal Customer Service and Service Delivery to Restore Trust in Government" [19].

The US is a federal democracy, so digital transformation is happening simultaneously at the federal, local and state levels. The US are innovating with respect to specific digital services. There is an extensive system of agencies and institutions that facilitate electronic services provision. In the USA, the following institutions are engaged in the creation and provision of electronic services:

– US Digital Service (USDS);

– Technology transformation service;

– 18F;

– Presidential Innovation Society;

– Centers of excellence in IT modernization;

– Office of scientific and technical policy.

It is advisable to delegate most of the functions to a centralized body to define a digital transformation strategy that would contribute to a more effective restructuring of business processes (Fig. 9.5).

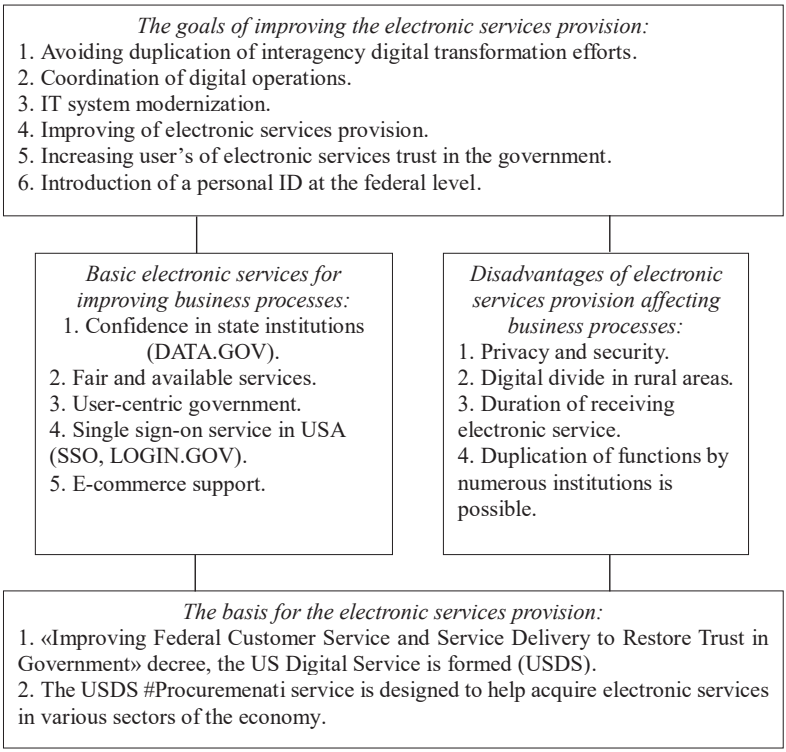


Fig. 9.5 – Peculiarities of electronic services provision in the USA

Source: [20].

During the vaccination fixation period of citizens against COVID-19, the United States did not introduce digital IDs at the federal level. At the same time, the leadership of the United States became more active. 30 states plan to introduce digital driver's licenses, and 6 states are already offering them.

The modernization of electronic services provision in the USA is aimed mainly at migration policy, social services and e-commerce between government organizations and ministries.

The main difference of modern economy models and the traditional (industrial) ones is the mechanism of interaction between subjects of economic activity. Its formation was preceded by the process of technological business processes transformation, both within companies and between them. Digital

technologies were designed to reduce production costs. Nowadays, this opportunity is increasing in the conditions of well-coordinated mechanism for electronic services provision and digital automation of production.

Taking into account the experience of other countries on the way to digitization will help Ukraine to avoid typical mistakes and use the most successful cases in its own practice. State authorities and enterprises need established two-way communication, obtaining the necessary information, conducting consultations on the e-services provision for the effective restructuring of business processes.

Questions for self-control:

1. Describe Estonia's case study on the introduction of e-services and features of digital business process development.
2. Define the peculiarities of electronic services provision in Estonia.
3. Describe the electronic service provision system in Sweden.
4. What are the peculiarities of electronic services provision in Sweden?
5. Characterize Singapore's case study on the introduction of e-services and features of digital business process development.
6. What are the peculiarities of electronic services provision in Singapore?
7. What are the steps to implementation of the general service technological architecture of electronic services provision in Singapore?
8. Describe the peculiarities of electronic services provided in the USA.

9.3. Applied aspects of e-services in Ukraine

A key condition for building a digital society and a digital economy for the development of state, business and citizen communications online is the legislative regulation of such processes. Today Ukrainian regulatory legal issues

regarding the digital format of the participants activities in economic relations are defined in a number of such legislative acts as: Commercial, Civil, Tax Codes of Ukraine; laws of Ukraine: "On Information", "About the National Program of Informatization", "On Telecommunications", "On Electronic Documents and Electronic Document Circulation", "On State Registration of Legal Entities, Natural persons – Enterprises and Public Organizations", "On Access to Public Information", "On the protection of personal data", "On the permit system in the field of business activity", "On electronic commerce", "On public procurement", "On administrative services", "On the protection of information in information and telecommunication systems". Special attention should be paid to the Laws of Ukraine adopted during 2021–2022: "On electronic confidential services", "On stimulating the development of the digital economy in Ukraine", "On public electronic registers". The above-mentioned standards regulate and standardize the financial and economic activities of business entities and their cooperation with public authorities in a digital format.

The main body in the system of central executive bodies that ensures the formation and implementation of digital transformations state policy in Ukraine is the Ministry of Digital Transformation of Ukraine, which was created in September 2019. The Ministry ensures the formation and implementation of state policy: in the fields of digitization, digital development, digital economy, digital innovations, e-government and e-democracy, information society development, informatization; in the field of citizens' digital skills and digital rights development; in the fields of open data, development of national electronic information resources and interoperability, development of infrastructure for broadband access to the Internet and telecommunications, e-commerce and business; in the field of providing electronic and administrative services; in the fields of electronic trust services and electronic identification; in the field of the IT industry development, in the field of development and functioning of Diia City legal regime. The Ministry of Digital Transformation is actively developing

projects related to the digitalization of the economy and society in general, it is engaged in the automation of processes for the administrative services provision, and is creating a comprehensive system of electronic services in Ukraine – "A State in a Smartphone".

Recently, there have been many positive changes regarding the introduction of electronic services in Ukraine: various web portals and online services for the digital services provision have been created; the network of Centers for Administrative service (CASs) is developing, the list of digital services is continuously expanding, the number of web services is growing, etc.

In 2020, the Unified state web portal of electronic services was implemented – "Government services online" (https://diia.gov.ua) (Fig. 9.4), which concentrates public services that were previously placed on various portals of government bodies.

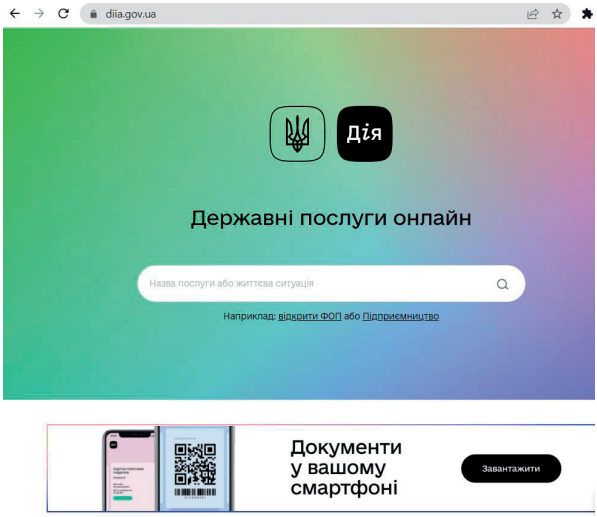


Fig. 9.4 – "Government Services Online" platform

The introduction of this project was implemented in order to ensure the rights of citizens and businesses to access digital services, information about electronic and administrative services; obtaining information from national electronic

information resources, that is necessary for providing services; appeal to public state authorities of Ukraine. The Unified state web portal of electronic services was put into exploitation by the Ministry of Digital Transformation of Ukraine without state budget funding. The Diia portal was created with the support of the USAID/UK aid project "Transparency and Accountability in Public Administration and Services / TAPAS" and the EGAP Program, which are financed by the Swiss Agency for Development and Cooperation; the USAID project "VzayemoDiia!" (SACCI) and the EGOV4UKRAINE project.

The Unified state web portal of electronic services «Diia Portal».

The "Government Services Online" portal presents services in certain areas for two categories:

1) citizens (references and extracts, transport, environment; land, construction, real estate; security and public order; licenses and permits; family; health; entrepreneurship; pensions, benefits and assistance);

2) business (land, construction, real estate; medicine and pharmaceuticals; licenses and permits; extracts and certificates; transport; business creation; Diia.City).

The full list of available electronic services can be found at *https://diia.gov.ua/services* and in Appendix B. Among the most popular public services are those related to cars, obtaining passports, pension provision, private entrepreneurship, taxation and obtaining information from public registers.

The list of services on the Diia platform is constantly growing, and existing services are being improved. In 2021, the Ministry of Digital Transformation introduced new services, such as: signing a document using an electronic signature, launching Covid-certificates, assigning and recalculating pensions, applying for subsidies. One of the main goals of the Ministry is to digitize 100 % of public services by 2024.

Communications of digital relations subjects (state authorities, local self-government bodies; legal entities and natural persons – entrepreneurs; citizens)

begin with electronic identification. The Diia platform operates an integrated electronic identification system ID.GOV.UA *(https://id.gov.ua)* for e-identification and user authentication using electronic signatures, Diia.Signature and BankID of the NBU. According to Ukrainian legislation, an electronic signature has the same legal force as a document signed personally. An electronic signature can be obtained through accredited key certification centers. The list of qualified providers of electronic trust services is posted on https://czo.gov.ua/ca-registry.

The relevant normative acts of Ukraine establish the right of citizens to use digital documents, which have the same legal force as plastic ones. The following digital documents are available in the mobile application:

– Ukrainian identity card;

– biometric foreign passport;

– taxpayer ID number (identification code);

– driver's license;

– vehicle registration certificate;

– vehicle insurance policy;

– birth certificate of the child;

– student card;

– Certificate of displaced person (IDP's certificate).

The following projects are implemented on the Diia platform:

1**. Diia. Digital education** *(https://osvita.diia.gov.ua/)* – a national digital literacy online platform that hosts over 80 educational series. Educational series on digital literacy developed by the EdEra online education studio with the support of the following companies: Google Ukraine, Microsoft Ukraine, DTEK Academy, UNDP Ukraine's Accelerator Lab, CISCO, CFC Consulting, Osvitoria, Global Teacher Prize. The project was implemented with the support of the Swiss-Ukrainian EGAP Program, financed by the Swiss Agency for Development and Cooperation and implemented by the Eastern Europe Foundation and the

Innovabridge Foundation.

The courses were developed taking into account European standards for teaching and assessing digital competence for such categories as: active citizens, civil servants, businesses and startups, entrepreneurs, schoolchildren, medical workers, military personnel, coaches, parents, beginners, etc. From September 1, 2022, all courses on Diia.Digital education provide for the accrual of 0,1–0,2 ECTS credits as part of self-education.

2**. Diia.Center** *(https://center.diia.gov.ua/)* – public service platform where:

1) citizens can receive administrative services; consultations on the organization and conduct of business, digital services; maps of Diia.Centers and information about Administrative Services Centres (ASC);

2) employees of the center (ASC) have access to the distance learning module, the library of materials and templates and sample documents.

3. **Diia.Business** *(https://business.diia.gov.ua/)* – an online platform for entrepreneurs, which contains information about starting your own business and its development. The business development and export project Diia.Business, which is a sub-brand of the Diia ecosystem, was launched by the Ministry of Digital Transformation of Ukraine in cooperation with the office for entrepreneurship and export development in 2020. Business representatives have access to: a guide for an entrepreneur, 150+ business ideas, templates of necessary legal documents for starting a business, services and support programs for business, cases of Ukrainian entrepreneurs, current news, free online and offline consultations, National online school for entrepreneurs, online exhibitions, the Diia.Business virtual center, the Diia.Business export direction, a marketplace of financial opportunities for business, an analysis of Ukrainian business' state, a platform for attracting impact investing and other initiatives.

4. **Diia City** *(https://city.diia.gov.ua)* – IT hub with a special legal and tax space for Ukrainian IT companies, where comfortable tax conditions have been created:

1) low tax rates: labor taxes: personal income tax (PIT) – 5 % (as standard in Ukraine, the rate is on the income of natural persons – 18 %), military tax – 1,5 %, unified social tax (UST) – 22 % with the minimum wage; tax on withdrawn capital: 10 % while withdrawing dividend (instead of income tax);

2) to stimulate investment: an alternative model of employment, a new form of cooperation using the GIG contract.

5. **E-Entrepreneur** – a comprehensive electronic public service, which is posted on the Diia portal with the aim of simplifying the conditions of registration and conducting business activities. Phased implementation of this experimental project is planned for 2021–2022. Through the "e-Entrepreneur" system, the following services will be provided:

– state registration of business entities of various forms of ownership;

– registration of a single tax payer, value added tax;

– issue of licenses for: the right to wholesale alcohol trade, retail trade of tobacco, fuel storage, retail trade of liquids used in electronic cigarettes;

– registration of settlement operations registrar and settlement operations software registrar, state registration of food market operators' capacities;

– registration of the declaration of the material and technical base conformity with the requirements of the legislation on labor protection;

– issuing a permit for the beginning of high-risk works and the beginning of operation (use) of machines, mechanisms, and high-risk equipment;

– opening a bank account [21].

6. **Diia. Open data** *(https://diia.data.gov.ua)* – the portal is designed to provide access to public information in the form of open data and provides access to authorities information with the possibility of its subsequent use.

Open data help to improve state services and create new digital services, monitor the work of public authorities. These data are very valuable and much of it should be available and open to businesses, startups, government officials, journalists, the public. The leader of data disclosure among state bodies is the

State Tax Service, the Antimonopoly Committee, the State Customs Service, the Office of the Prosecutor General, the Ministry of Education and Science.

In recent years, positive changes in the Ukrainian society, economy and its spheres are confirmed by the rise of Ukraine in the world rankings regarding its digital development. Leading international institutions and organizations are engaged in researching digitalization problems on a global scale: United Nations, World Bank, World Economic Forum, European Union and others.

Since 2014, the European Commission has been publishing materials on assessing progress in achieving the goals of the digital economy in the European Union and monitoring the state of digital development in individual member states, using the results of Eurostat surveys. Every year, the European Commission analyzes 34 indicators from 5 main categories (communication; human capital; use of Internet services; digital technologies integration; digital public services) and publishes a report on the progress of digital transformation in the EU, based on them. I-DESI (International Digital Economy and Society Index) was developed for comparison with countries outside the European Union.

Ukraine is not a member of the EU so its DESI index is not officially determined, also one of the reasons is the lack of relevant information (reporting), which, for its part, does not allow assessing digitalization level of the country and the possibilities of its development and competitiveness.

To assess the development of digital services, we will analyze the level of e-government development using two key indices: The UN Global E-Government Development Index (EGDI) and E-Participation Index (EPI). The E-Government Development Index is calculated by the UN Department of Economic and Social Affairs once every two years and is formed taking into account three indices: Online Service Index (OSI), Telecommunication Infrastructure Index (TII) and Human Capital Index (HCI).

According to UN 2020 data, Ukraine took 69th place in the ranking of countries with the most developed e-government, which is 13 positions higher

than in 2018. According to the data of E-Government Survey 2020, Ukraine has entered the group of countries with a high level of e-government development and became one of the 12 countries that moved to a very high level according to the E-Participation Index. The indicator of E-Government Development Index 2020 is 0,7119 [22, p. 11]. The leaders of this rating are Denmark, Korea, and Estonia (Table 9.4).

***Table 9.4* – E-Government Development Index (2014–2020)**

Country	2020		2018		2016		2014	
	Place in the rating	E-Government Development Index	Place in the rating	E-Government Development Index	Place in the rating	E-Government Development Index	Place in the rating	E-Government Development Index
Denmark	1	0,9758	1	0,9150	9	0.8510	16	0,8162
Korea	2	0,956	3	0,9010	3	0,8915	1	0,9462
Estonia	3	0,9473	16	0,8486	13	0,8334	15	0,8180
Finland	4	0,9452	6	0,8815	5	0,8817	10	0,8449
Australia	5	0,9432	2	0,9053	2	0,9143	2	0,9103
Sweden	6	0,9365	5	0,8882	6	0.8704	14	0,8225
Great Britain	7	0,9358	4	0,8999	1	0,9193	8	0,8695
New Zealand	8	0,9339	8	0,8806	8	0,8653	9	0,8644
…								
Lithuania	20	0,8665	40	0,7534	23	0,7747	29	0,7271
Kazakhstan	29	0,8375	39	0,7597	33	0,7283	28	0,7283
Russia	36	0,8244	32	0,7969	35	0,7215	27	0,7296
Belarus	40	0,8084	38	0,7641	49	0,6625	55	0,6053
….								
Ukraine	69	0,7119	82	0,6165	62	0,6076	87	0,5032
….								
Somalia	191	0,1293	193	0,0566	193	0,0270	193	0,0139

Source: [23].

Estonia deserves special attention, since in recent years, according to the UN, it has been among the twenty world leaders in terms of EGDI, and according to the 2020 indicator, it is in the top three of the e-Government Development Index rating.

A certain lagging behind the world leaders of countries with developing economic systems indicates the need for measures of effective institutional support by the state regarding the development of this direction.

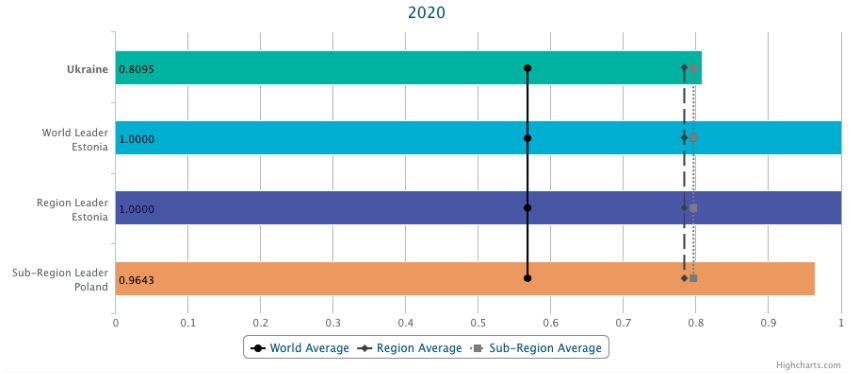
The key indicator for measuring e-government is E-Participation Index (EPI), which is evaluated by analyzing the level of national e-government portals (government platforms) development regarding information interaction with citizens. The UN E-Participation Rating measures e-Participation by indicators:

1) the use of interactive services for providing information by governments to citizens;

2) interaction and consultations with citizens;

3) citizen participation.

In the 2020 UN E-Participation rating, Ukraine took 46th place among 193 countries of the world, rising 29 positions compared to 2018. The leaders of this rating are Estonia, South Korea, the USA, Japan and New Zealand (Fig. 9.5).



E-Participation Index	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Ukraine (Rank)	46	75	32	77	83	48	14	28	24	24
Ukraine (Value)	0.80950	0.68540	0.74576	0.43137	0.15790	0.25714	0.56818	0.36507	0.34426	0.39660

Fig. 9.5 – E-Participation Index of Ukrainian citizens [24]

In recent years, digital tools for the interaction of citizens and businesses with public authorities have been successfully implemented in Ukraine. Citizens and business representatives gained access to such services: e-appeal; e-consultations; e-petitions to the Verkhovna Rada of Ukraine, the President of Ukraine and to the Cabinet of Ministers of Ukraine, central and local executive bodies and local self-government bodies; e-contests of projects and programs of civil society institutions, e-elections of public councils members under executive

authorities, e-registration of an entrepreneur, e-payment of taxes, e-licenses.

In 2020, Ukraine for the first time participated in the Open Data Maturity Report 2020 – European open data rating, and it took 17th place among European countries in the open data maturity rating. In the Open Data Maturity 2021 rating, Ukraine rose to 6th place, the level of open data maturity was 94 % (Fig. 9.6).

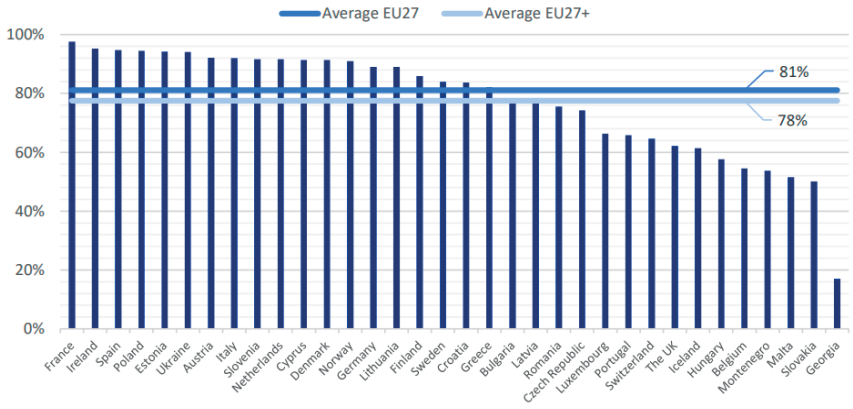


Fig. 9.6 – Overall Open Data Maturity Indicators 2021 [25, p. 5]

Fig. 9.6 illustrates the overall open data maturity indicators for all 34 European participating countries in 2021. It is obvious that Ukraine occupies a much higher position in the rating than the 21 EU countries. France has the best indicator among countries (97,5 %), it has been leading in this rating for recent years. The top five include Ireland, Spain, Poland, and Estonia (Table 9.5, Fig. 9.7).

***Table 9.5* – Open Data Maturity Development Indicator in Ukraine 2020–2021**

Open Data Maturity Development Indicator, %				
	Ukraine		The average indicator of the European Union countries	
	2020	2021	2020	2021
Overall, including:	84	94 (+10)	78	81 (+3)
Open Data policy	85	98 (+13)	85	87 (+2)
Web-portal of Open Data	88	94 (+6)	79	83 (+4)
Open Data impact	85	95 (+10)	72	77 (+5)
Open Data quality	78	89 (+11)	76	77 (+1)

Such positive dynamics are present in all points of Open Data Maturity Development assessment, where Ukraine will demonstrate a trend towards stable positive dynamics and one of the highest growth rates in Europe.

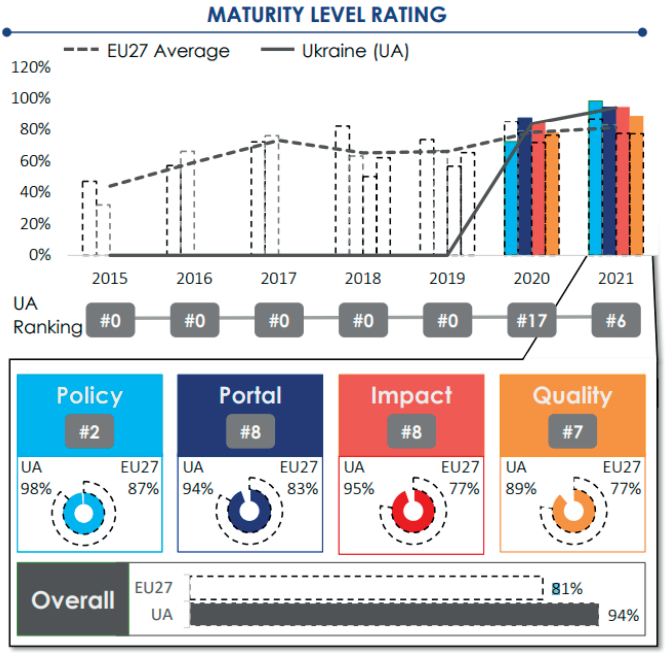


Fig. 9.7 – Open Data State of Ukraine 2021 [26]

According to all indicators, Ukraine had demonstrated higher results than the average one in Europe. The presence of Ukraine's positive dynamics in the above-mentioned world rankings in recent years reflects the gradual digitalization of society and the country's economy.

Questions for self-control:

1. Describe the areas and categories of the "Government Services Online" portal («Diia Portal»).
2. What digital documents are available in the Diia mobile application?

3. Characterize the projects, which are implemented on the Diia platform. Define their features.
4. Analyze Ukraine's position in the E-Government Development Index Ranking (2014–2020).
5. Analyze Ukraine's position in the E-Participation Index Ranking.
6. Which are Ukraine's positions in the Open Data Maturity ratings 2021–2022? Describe and analyze the indicators.

9.4. Transformation of business processes in digital economy

The digital approach is a new business philosophy that involves the presence and constant development of feedback between the entities of business relations regarding the development of economy, which is driven by innovative technologies. Paradoxically, however, digitalization does not consist in the total implementation of IT technologies, but in the deep transformation of business strategy. This is a complete renewal of the current business model, and therefore a rethinking of the mission of the activity, processes, tools and means.

In digital economy, competition is increasingly becoming a competition not of resources, but of strategies, when organizations' investments are more and more often focused on building core competencies and securing their dynamic capabilities. Innovative potential, the ability to form more effective strategies and constantly develop organizations, updating their structure and key business processes in response to the challenges of the external environment, play even greater role.

Business can choose any direction of development, guided by the mission and available tools for influencing processes. However, it is digital transformation that has the greatest potential. It is a new prototype of the reconstruction of society and economy, which is realized by implementing a flexible modular complex of

models and tools that are fully available for adaptation in traditional business models (Fig. 9.8).

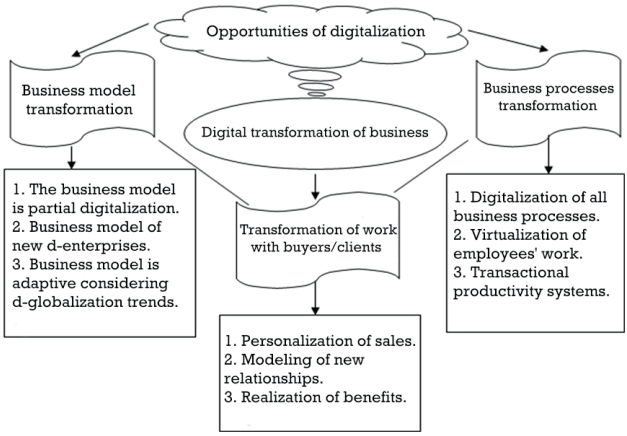


Fig. 9.8 – Model of digital business transformation

Source: [27, p. 146–148].

It is obvious that business digitalization process covers three main directions:

1) transformation of business models;

2) transformation of relations with buyers and/or clients;

3) transformation of business processes.

Let us consider the essence of mentioned directions.

Business model is a broad term used to describe the method (positions in the value chain, customer choice, products, pricing) of doing business [28]. A revenue generation model describes the process by which a business makes money and defines exactly how the firm is going to price its products and services.

Today, when defining the essence of the "business model" concept, 2 approaches are distinguished:

1) business process/role-oriented (an approach aimed at inside the enterprise);

2) value/customer-oriented (an approach aimed at the external environment of the enterprise).

The first approach is related to the consideration of the enterprise's activities from the point of view of business processes and technologies (the focus of attention is directed inside the company). The second approach, on the contrary, involves focusing on the value that an enterprise creates for external customers, as well as on the results of activities. In fact, the business model allows you to get an answer to the question: what and how should be done to achieve the desired result.

The key business model elements of any enterprise that determine its content are:

– the value for external customers that an enterprise offers based on its products and services;

– the system for creating that value, including suppliers and target customers, as well as value chains;

– assets that an enterprise uses to create value;

– the financial model of the enterprise, which determines both the structure of its costs and the methods of profit-making.

The business model turns innovations into economic value for the business (Fig. 9.9). It describes in detail how a company makes money by clearly defining its place in the value chain. A business model is built of various business components, which include entrepreneurship, strategy, economics, finance, operations, competitive strategies, marketing and sustainable growth strategies.

Fig. 9.9 – The sequence of value creation by business model [29]

The business model structure can be presented in the form of three main components:

– functional model – business processes and events that initiate these business processes, output results;

– organizational model – organizational structure of the enterprise and the roles that departments perform in the enterprise's management system;

– information model – a scheme of information flows in the control loop, built on the basis of a functional model.

The business model is necessary to form a holistic view of the following essential characteristics of the enterprise: what value and in what way is it created for the consumer; to whom and how it is provided; how resources and capabilities are used to create sustainable competitive advantage and make profit.

Comparison of business models in the conditions of classical and digital economy are presented in Table 9.6.

***Table 9.6* – Comparison of business models in the conditions of classical and digital economy**

Criteria	*Classic business model*	*Digital business model*
Strategic planning and data analysis	Finding and analysing trends	Identifying trends based on Big Data and machine learning
Production	Manufacturing products	Production optimization in accordance with customer requests
Storage	Storage of finished products	Optimizing remains in real time
Transport and logistics	Planning, delivery and control for efficient logistics	Real-time delivery control and process forecasting
Sale	Distribution of products through sales points	Direct sales to consumers

Source: [28; 30].

The introduction of digital technologies led to the formation and development of such business models categories as:

– digital platforms that provide direct interaction of participants;

– service business models based on the use of resources instead of owning them (including Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS), etc.);

– business models whose pricing is based on the achievement of results (outcome based models) and effect for the client, including those on the basis of complex products and services consumption;

– crowdsourcing models based on the involvement of external resources for the implementation of business processes;

– business models based on the monetization of clients' personal data, when free services to users sell their data at other consumer segments.

Digital transformation consists in the use of modern (disruptive) technologies to increase enterprise's productivity and value in today's conditions. The main results of such transformation can be: cost reduction, improvement of services and products quality, as well as increase productivity. KPMG research shows that in 61 % of companies, digital technologies have contributed to growth of competition in their business from new employees.

The second direction of digitalization impact on business is the *transformation of relations with buyers and/or clients*.

The most important reason why people buy a certain product is not the quality or price, but rather the feeling they get after the purchase. Due to Customer Relationship Management (CRM), companies work methodically to exceed their customers' expectations, meet their needs, and delight them. It is digitalization that significantly helps to solve this task due to:

1. A deeper understanding of clients – is realized due to the company's use of social networks in order to study client's requirements and preferences, promoting the brand, providing support to clients during the purchase and use of products, etc.

2. Revenue growth from the company's existing clients – statistical data on the purchases of its own customers are used for organization of personalized sales and full customer service, development of individual packages of proposals.

3. The search for new touchpoints with clients is implemented by creating opportunities for own customers for self-service with the help of digital technologies, or multi-channel ways of access to customers.

4. Building a successful client experience – effective implementation of the initiative turns into customer satisfaction and loyalty.

5. The possibility to use customer data to further improve their experience, satisfy their preferences, understand pain points and obtain a complete customer profile.

6. Fast, effective response and resolution of customer issues in real time.

7. Much of the digital transformation power lies in its ability to enhance level of interaction with customers. For example, promptness in responding and fulfilling customer requests increases their engagement. Moreover, digitalization allows customers to access functions, make transactions and initiate communication anytime and anywhere, which increases the convenience and speed of request execution.

8. Providing a higher level of customer service, increasing opportunities to build relationships with each customer.

An important component of digital transformation of enterprises is *digitalization of their business processes*. It should be noted that under this term, domestic scientists consider both the automation of basic and auxiliary (supporting) business processes, as well as management processes, which are carried out in order to optimize and ensure the efficiency of the enterprise and industry activity in general [30, p. 20].

According to the results of research conducted by Ernst & Young, digitalization has the greatest impact on such components of business processes as: interaction with customers, value proposition and internal infrastructure management [31].

Business processes digitalization of enterprises through the introduction of digital technologies contributes to the formation of more perfect business processes, which in turn leads to the improvement of their efficiency, flexibility, adaptability to external environment changes and formation of competitive advantages. Business processes digitalization of enterprises involves consistent implementation of several stages:

– collection of complete information about each business process, its

modelling and identification;

– identification of places of origin, further processing and consumption of information;

– information business processes modelling;

– information system modification considering the digitalization model; automated information system creation (due to the use of hardware and software);

– all business processes controlling (fixation of individual business processes parameters in the information system, drawing up plans, creating reports, etc.).

It should be noted that the methodology of business processes digitalization of enterprise is based on the supporting concepts of information systems, which in their development evolved as follows: MRP I (Material Requirements Planning) – MRP II (Manufacturing Resource Planning) – Enterprise ERP systems (Enterprise Requirements Planning) – CSRP (Customer Synchronized Resource Planning). Modern ERP system is a complex of interdependent modules (appendices) that ensure the operation of a single integrated information environment due to the automation of all business processes of the enterprise. Currently, such a domestic software product as the ERP system of IT-Enterprise corporation "Information Technologies" is becoming common among enterprises in Ukraine. This system has complex "Industry 4.0" implementation projects at industrial (metallurgy, machine-building, food, chemical, cable) and agricultural enterprises, including the introduction of production management systems, controlling, logistics, budgeting, etc.

All IT-Enterprise system modules are conventionally grouped into management circuits of such components as: production and technical re-equipment of production; implementation of projects; basic production means; business processes; document flow; personnel; logistics; budgeting and controlling. Business processes digitalization of the enterprise includes a number of elements, a brief characteristics of the main ones is given in Table 9.7.

Table 9.7 – **Characteristics of the components of business processes digitalization of the enterprise**

№ p/p	Component	Brief characteristics
1.	Realization	Ensuring the successful realization of the company's strategy requires thorough market and competitors analysis.
2.	Result	The conclusion of this stage will be an informed decision on whether to move to digital transformation or not.
3.	Analysis	A thorough analysis of what enterprises can do better with existing business processes and which business processes require immediate implementation of the latest technologies should be conducted.
4.	Recognition	Enterprises need to identify changes they can introduce to business processes to improve them. For this, it is necessary to perform many actions, in particular, the following: study current business processes; involve key stakeholders; study the latest innovative technologies; choose technologies and technical products that can be implemented in the activity of the enterprise; view and improve products, service offerings and even business models.
5.	Prioritization	Enterprises must first rethink detected changes, analyse expenses and benefits, assess possibilities, resources, budgets, etc., and then prioritize based on this.
6.	Implementation	Implementation of changes. Includes obtaining the necessary budgets, identifying responsible groups, redesigning of processes and implementation using identified technologies and technical products.
7.	Deployment	It consists in making the new system available for use. Includes developing a clear deployment plan with clearly defined functions, responsibilities and timelines.

Source: [32].

Business processes digitalization (English: digital work) involves the use of digital tools when carrying out business organization activities, and not only the digitalization of data array. First of all, there is a need for preliminary assessment of the existing information system of the enterprise, to determine the procedures and processes that need to be automated or digitized. It is also equally important to determine the interaction between business processes at the level of their implementation and consider the hierarchical structure of business processes of economic entities.

Improved business processes, in turn, change priorities in the distribution of enterprise resources. The main functional areas of the enterprise, including marketing, finance, production and personnel, are determined by the available

information systems capabilities that ensure the implementation of production and organizational activities. The decision-making process is mainly focused on the use of an integrated information base, which is formed at lower management levels, and on data flows from structures external to the enterprise, obtained with the help of new telecommunication means and services based on them. Information technologies implementation in the organization of business processes is based on electronic document flow and the transformation of information resources (data) into a means of achieving commercial goals.

The goal of digital transformation is to create the right foundation for digital business. This means creating an organization that can continue to evolve as needed to keep up with changes in technology and customer expectations. Digital strategy must be transparent enough to help the company survive the changes in the digital economy, so that it continues to deliver digital advantage to the business [33].

Therefore, business processes digitalization is aimed at optimizing the existing resource potential, working time expenditure and improving the efficiency of economic activity.

Questions for self-control:

1. What are the features of competition in conditions of digital transformations?
2. What is the digital transformation of business? Outline its main directions.
3. What is the essence of the business model?
4. What new types of business models have appeared in conditions of digitalization?
5. What are the features of the business model in digital economy?
6. Explain how digitalization affects the transformation of relations with buyers and/or clients.

7. What advantages do buyers and clients receive during digitalization implementation?

8. Describe the components of business processes digitalization of the enterprise.

9. What are the consequences of business processes digitalization for the enterprise?

10. Outline the stages of business processes digitalization.

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