BUSINESS AND ENTREPRENEURSHIP

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BUSINESS MODELS IN THE CONDITIONS OF DIGITAL TRANSFORMATION

Digital transformation implies some organizational changes when using digital technologies and new business models to improve efficiency. With another definition, if we try to compare the concepts of "Digital transformation" and "Digitalization", then digital

transformation includes changing the company's current business model, its strategy and values, ways of interaction with customers and suppliers, using digital technologies. At the same time, if the digitalization is based on some technology, the transformation should be directed towards the customer, in the conditions of the introduction and use of automated systems. Clarification of these approaches is of agenda importance for the transition to digital transformation of the business environment, to which this article is dedicated.

The article presents the approaches, stages, levels of digital business transformation of the business environment, the role of new business models in the conditions of the digital economy, as well as studies the changes in the digitalization index of the business and the issues of introduction and use of automated systems.

Introduction. In the conditions of the information society, information and knowledge act as the most important economic good. Economic activity is built around information acquisition, storage, processing, use, knowledge acquisition and application, gaining competitive advantages on this basis, forming and satisfying new consumer demands. Thus, a fundamental change in the nature and content of economic activity takes place, which finds its systemic reflection in the formation of a new type of economy.The above mentioned justifies the importance of this topic and the modernity of the study.

Digital business transformation is a transition from the traditional system of enterprise management to innovation based on the introduction of relevant information and communication technologies in the enterprise's activities, the purpose of which is to transform the business and/or transform it into a digital form in order to gain and maintain competitive advantages in the modern society. The purpose of this article is the study of the mechanisms of the digital economy in the business environment, as well as the identification of models and algorithms, the nomination of automated business systems.

Literature review. The term "Digital Economy" was first coined by Don Tapscott in his book "Digital Economy: Promise and Peril in the Age of Networked Intelligence",1994.

In the professional literature, one can often find other related terms, including "new economy", "network economy", "application economy", "post-industrial economy", "internet economy", etc., which appear as synonyms of "digital economy"[1].The term digital economy was first used in Don Tapscott's book "The Digital Economy: The Promises and Perils of the Age of Internet Intelligence", 1995. That book was one of the first to discuss how the Internet would change the way business was done. The digital economy can be considered as one of the stages of the formation of a new economy, the stages preceding which are the post-industrial economy, the information-service economy, the

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[1] Strelkova I., Digital economy: new opportunities and threats for the development of the world economy, Economics. Taxes. Law, No. 2, 2018, p. 19 (*in Russian*).

Internet economy. With this approach, the new economy can be described as a system of economic relations based on information and communication technologies, where economic processes are managed by the use of digital models.The digital economy is a new form of economy based on knowledge and digital technologies, within which new digital skills and opportunities are created for society, business and the state.[2]

In this work we use the pocket data book where the Higher School of Economics of the National Research University implemented analyses which show the most recent statistical data, the level and dynamics of the digital economy development in the Russian Federation. International comparisons are provided for a number of indicators. The term "digital economy" was first mentioned in the research of Western scientists - Professor D. Tapscott , researcher R. Bukht and Professor R. Heeks. However, their works do not reveal this concept, but rather describe its characteristics. In particular, D. Tapscott examines the evolution of economic models, the impact of digital technologies on business and management, and gives forecasts of future changes in the economy. As the literature review in this work we include the OECD survey, where the OECD Informal Group on Measuring GDP in Digitalized Economy conducted a survey on economies' practices and thoughts on the definition and classification of digital economic activities and the statistical challenges of creating a new satellite account.

According to the OECD, the digital economy is the fusion of several general purpose technologies (GPTs) and the economic and social activities carried out by people through the Internet and related technologies. It includes the physical infrastructure on which digital technologies are based (broadband lines, routers), the devices used for access (PCs, smartphones), the applications they power (Google, Salesforce) and the functionality they provide (IoT, data analytics, cloud computing)[3]. For the development of digital transformation of business, K. Peres suggests three main stages, each of which is related to a specific technological progress. The first phase of the 1970s and 80s was marked by the emergence of integrated circuits, which reduced and greatly accelerated computing. Thus, judging from the characteristics and multitude of definitions in the literature listed above, it can be concluded that the digital economy is characterized as a type of economy, the development of which is based on the development and advancement of digital technologies, which in turn is one of the most important ways of the 21st century, which has a tremendous growth rate of development compared to other directions of science.

As Niu mentions, the first wave of digitization was supported by the adoption and introduction of refined technologies such as information management systems, automatic reporting and monitoring systems for business performance, broadband, voice telecommunications, including fixed and mobile. The second wave enabled the big web of dot coms to connect the consumers and enterprises

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[2] Puzina N., Reutova I., Leshenko N., The Digital Economy: Approaches to the Definition and the Regional Dimension- Omsk State University, 644077 Omsk, Russia, 2021, p. 3.

[3] Bukht R., Heeks R. Defining, Conceptualising and Measuring the Digital Economy,September 2018International Organisations Research Journal 13(2):143-172, pp. 149-153.

at a new level for purchasing, selling, and distributing services. Consequently, the second wave transformed into the third one entailing the more advanced technologies such as the internet of things (IOT), artificial intelligence, robotics, and sensors. These mechanisms helped identify contemporary perspectives on the digital economy[4]. And the integration degree of digital economy and tertiary industry is obviously higher than that of primary industry and secondary industry, especially in 2020. Due to the COVID-19 pandemic, new digital industrial models such as online office, e-education and network video have emerged and developed rapidly[5]. Remane   have discussed the mechanisms for establishing digital business with the existing traditional market. The authors presented the scheme to be used by conventional business holders to modify their business market to suit the digital world. The first step in this scheme was the selection of existing services. The second was the modification of the business model, and the third was establishing newer configurations[6].

The subject of our study is the characteristics of the business environment in the conditions of digital transformation, therefore it was necessary to study the genealogy of the digital economy and digital transformation in a literature review.

Research methodology. The methodological basis of the research is the widely used models, categories and automated systems of the study of the digitalization of the business environment. Graphical data analysis and comparison methods were chosen as research methodology.

This method is useful for comparing data sets side by side. Graphical data analysis is about using graphics to find results. Comparison of data points is probably the most common and easy-to-understand method for data analysis. As the name suggests, we use comparison to evaluate and compare values between two or more data points.

Analysis of research in the field of digital business transformation has shown that there are many approaches and classifications that describe areas of change in a company. However, there are no systematic algorithms for implementing transformations in companies, which lead to an inefficient use of resources, reducing the competitiveness of industrial enterprises.

As it can be seen from the algorithm, starting from the optimization of the main business process, there are differences in the implementation of the business model. But in the case of traditional markets, data is entered manually and decisions are made with the direct participation of employees. In the case of digital markets, it is carried out by automatic data entry, using sensors, digital tools, excluding participants in the business process, moving to a decision-making system based on machine learning and artificial intelligence.

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[4] Niu F. (2022). The Role of the Digital Economy in Rebuilding and Maintaining Social Governance Mechanisms. Front. Public Health 9:819727. doi: 10.3389/fpubh.2021.819727

[5] Lin Xiang,Research on the Mechanism of Digital Economy Promoting Industrial Structure Optimization in China, School of Business, Jianghan University, Wuhan 430056, China.

[6] Brousseau E., Penard T. (2009). The economics of digital business models: a framework for analyzing the economics of platforms. *Review of Network Economics, 6*(2), pp. 81–114.
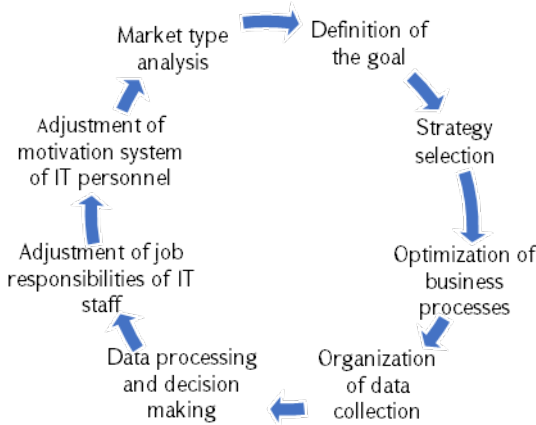
Figure 1. *Stages of implementation of algorithms of the digital economy[7]*

The top three digital transformation initiatives at organizations today are accelerating innovation (81%); modernized IT infrastructure with increased agility, flexibility, management, and security (80%); and improving operational agility to more rapidly adapt to change (79%)[8].

The transformation of the business environment into digital business (DB) first of all implies the transition from paper exchange of business information to electronic one, for which the following means are used[9]:

a) Electronic data exchange (EDI),
b) use of electronic mail (e-mail),
c) Electronic fund transfer (EFT),
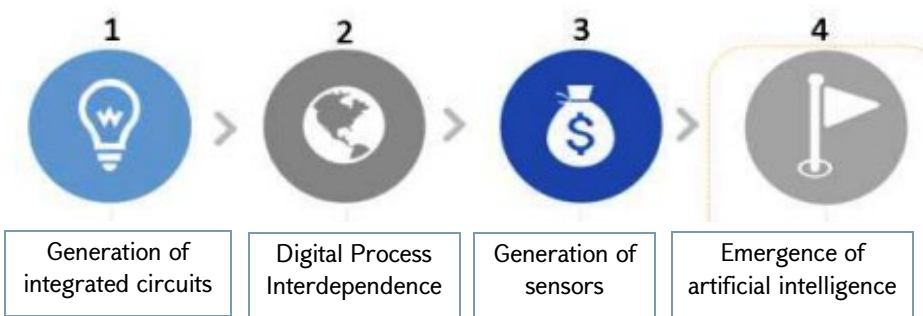d) Electronic bulletin boards
e) use of other network technologies.

Figure 3. *Development stages of digital business transformation*

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[7] Anatolyeva M., Gennadyeva H., Algorithm for digital transformation of companies based on business models // Development of business strategies, projects, finance and communication, pp. 384-389 (*in Russian*).

[8] Solis B., Szymanski J., The State of Digital Transformation, 2016, Survey data from 528 digital leaders and strategists. Altimeter group, p. 3.

[9] Navasardyan A., Problems and challenges of electronic or digital business development/ "ALTERNATIVE" Scientific Journal, N3, 2017 (*in Armenian*).

The first phase of the digital transformation of business was marked by the emergence of integrated circuits, which reduced and greatly accelerated computing. The second phase of the 1990s and 2000s led to the emergence of digital process interconnection. Computers were connected to local and global networks, web and cloud services were created. The third phase began in 2010, and was characterized by the emergence of sensors connected to wireless networks, which provided new opportunities in the development of monitoring. Now the authors distinguish the fourth stage, in which we are now. It began around in 2015, marked by the emergence and development of artificial intelligence, which made it possible not only to analyze masses of data, but also to perform "human" functions with the help of robots.The development stages of digital transformation do not end there, because transformation is a dynamic, constantly developing process.There is a noticeable trend of increasing technological advancements over time. If in the last century the interval for the emergence of new technologies was 7-10 years, now that period is measured in months. All this indicates that the digital transformation of the business is accelerating its pace and levels, and during the transformation, both market changes and new technological advances should be followed.

Analysis: During the digital transformation of business and its implementation, the role of business models is greatly emphasized. New business models are customer-centric, which completely defines their structure, from a value proposition that addresses anticipated customer needs, to just-in-time delivery, to revenue streams based on the time a customer uses the product. The high-speed processing of big data is becoming a major source of value creation, as transactions are performed in real time and often simultaneously. Personal data are becoming a key asset for digital companies, and their availability in large quantities increases their market value.

The current trend is the development of open data platforms that stimulate the emergence and spread of innovative business models in the economy. The embodiment of this concept in the financial sector is the Open Banking system, which enables a third party to analyze or use data, integrate various applications and services, thereby improving the quality of service. The spread of the Internet of Things (IOT), big data, artificial intelligence (AI), machine learning and other digital technologies has led to the development of the following categories of business models:

- *digital platforms* that enable direct interaction between sellers, buyers and supplier partners, minimizing transaction costs and expanding opportunities for joint consumption of goods and services.
- *"as a service"* - *service business models* based on the use of resources instead of their ownership (including Software-as-a-service (SaaS), Infrastructure-as-a-service (IaaS), etc.). Service models facilitate the personalization of products and services by allowing the customer to consume the required product to achieve a desired outcome.
- *crowdsourcing models*, which are based on the involvement of external resources (money, people, ideas, etc.) in order to implement business

processes: innovation, product development, production, marketing and sales, etc.

▪ ***business models based on monetizing customers' personal data***, where free information for users is sold to other consumer segments.

Let's take a look at the most used types of digital business models.

1. Free-Model (Ad-supported Model)

Everyone knows the "free" business model as it is used by two of the most famous companies in the world. Google, as well as Facebook, are good examples of how to make use of the ad-supported and "free" business model. The idea behind this business model is to offer a service for free and the user becomes then the product that is being sold.

2. Freemium Model

Especially in the software world, this is one of the most commonly seen digital business models. Users get free access to a basic version (Free) of the product which is mostly limited in some ways. If the user wants to use more features or resources, then they have the option to upgrade to the paid version (Premium).

3. On-Demand Model

Similar to the "Access-Over-Ownership" is also the On-Demand business model. In this case, it is not a physical product you are owning but a virtual product or a service. On-demand works for example via online video stores, where you get the right to consume a video for a certain period of time (Amazon Video, Apple TV+, etc.).

4. E-Commerce Model

One of the first and by far most successful companies to sell physical products via an online shop and e-commerce business model is Amazon. By today it is also the best-known business model on the web and it is possible to buy almost everything on the Internet today.

5. Marketplace Model (Peer-to-peer, two-sided marketplace)

The two-sided marketplace is something we see quite often on the Internet. The sellers and the buyers use a 3rd party platform to trade their goods and services. This marketplace can involve services (Uber, Upwork, etc.) or also products (eBay, Etsy, Amazon).

After the Covid 19 pandemic, the integrated development of digital economy and industries is evolving to a deeper level, which is meaningful to the optimization and upgrading of industrial structure.

Table 1

Integration Rate of Digital Economy with Three Industries[10]

Year	Primary Industry	Secondary Industry	Tertiary Industry
2016	6.2%	16.8%	29.6%
2017	6.5%	17.2%	32.6%
2018	7.3%	18.3%	35.9%
2019	8.2%	19.5%	37.8%
2020	8.9%	21.0%	40.7%

[10] Lin Xiang, Research on the Mechanism of Digital Economy Promoting Industrial Structure Optimization in China, School of Business, Jianghan University, Wuhan 430056, China.

A large number of enterprises are using big data and the technology of industrial Internet to strengthen the precise alignment of supply and demand, efficient production and coordination. The industry digitalization is playing a critical role in the internal structure of digital economy from 2015 to 2020 (Figure 1). In recent years, Armenia has taken important steps in digital transformation and development. In order to increase the efficiency and transparency of the management system in Armenia and improve the business environment, it is essential to create a unified digital environment using the latest technologies. The Armenian government today approved the country's Digitalization Strategy.

The strategy envisages digital transformation of the Government, the economy and the society through introduction and development of innovative technologies, cyber security, data policy and e-services and e-government systems, coordination of digitalization processes, creation of common standards and digital environment, as well as initiatives promoting the use of digital technologies in the private sector of the economy and the development and implementation of programs promoting the use of electronic tools by the public. According to the results of the research, 34% of Armenian organizations have their own website, 58% use e-mail for communication, 59% are represented on social media, only 12% use cloud technologies, the use of management systems is even less - ERP: 1% and CRM: 3%[11].

The most important task of modern business models is the creation of a multi-content space, the synchronization of data and information across all digital and physical platforms of interaction to meet the needs of customers at any time and in any place.

The National Research Institute of Higher School of Economics developed the Business Digitization Index, which is calculated based on the following five indicators: broadband Internet access, cloud services, radio frequency identification technology, ERP systems and participation in e-commerce. The leader among the countries is Finland with 50 points, followed by Belgium, the Netherlands (47), Japan (46) and others. At the same time, the level of use of the Internet and broadband Internet was considered among the ICTs most used by enterprises all over the world (Figure 3).
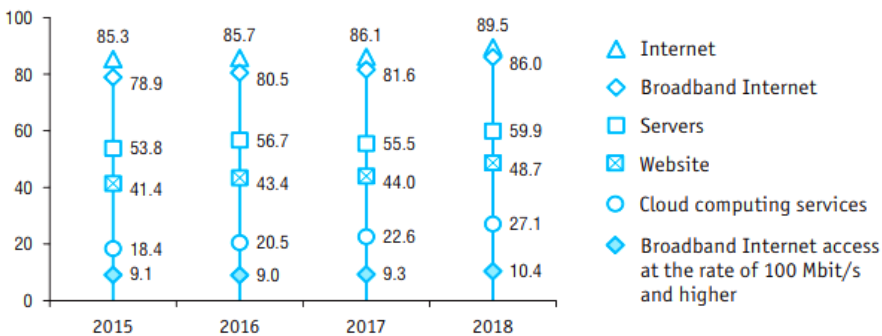

Figure 3. *ICT use by enterprises (%)[12]*

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[11] Decision of the Government of the Republic of Armenia - Armenia's digitalization strategy 11.02.2021/ N 183-L

[12] Pocket Data Book / G. Abdrakhmanova, A. Demyanova, S. Fridlyanova et al.; L. Gokhberg (ed.); National Research University Higher School of Economics. Moscow : HSE, 2020, 112 p.

Now let's look at the currently used models - automated systems, which make it possible to implement industrial automation systems in almost all production areas.

The first of these systems is **MRP, a material resource requirements planning** concept, which requires information about the final product's production structure and technologies, inventory reserves, schedules, raw material supply contracts, etc. The main goal of the system is that any unit of the resource should be available at the required place and time. The MRP system optimizes production time and costs, increasing the efficiency of the production process. The main advantages of using the system are:

1. Availability of materials at the time of manufacture
2. Optimization of warehouses
3. Reduction of production loss during assembly of finished products
4. Ensuring coordination of production as a result of monitoring the status of each unit of material, which provides an opportunity to track the entire period of use of the material.

Previously, the MRP system was designed for inventory control and replenishment. Later, the MRP technology was expanded to the level of production capacity planning (CRP: Capacity Recourses Planning), financial planning level (FRP: Finance Requirements Planning), and the level of the full chain of planning within the framework of the MRPII system. As a result of the development of the MRP class planning system, financial analysis, structural management, the ERP concept emerged. **ERP (Enterprise-wide Resources Planning)** is the concept of a systematic solution to the problems of accounting, control, planning and management of production and financial resources of the enterprise. Business management, those business functions that ensure the realization of planned (programmed) goals for the management process, is a set of logically interconnected tasks aimed at achieving a predetermined result. The ERP system, the enterprise resource planning and management system, unlike the accounting systems, enables competent planning of the enterprise's resources, that is, provides an opportunity to receive information on future results. In the process of business management, ERP occupies a key place, because it allows to involve a wide range of all functions of the enterprise and integrate them in a single database. The automated business system works as follows: After planning, the next step is the production process. Before starting production, "purchase orders" are created in the system for the purchase of necessary raw materials. Based on the purchase order, the supply department makes the necessary purchases, and the appropriate employees receive the purchased quantities into the appropriate warehouse. As a result of these actions, a certain stock of raw materials is formed in the ERP system. To start production, a "production order" is created in the system. When the production process ends, the person responsible for production closes the created production order in the system, as a result of which the system automatically reduces the stock of raw materials and increases the stock of finished products already produced in the ERP system. As a result, a certain number of products available for sale appears in the system. In the next step, certain financial

operations are performed, as a result of which the manufactured products receive a price and other costs are calculated.
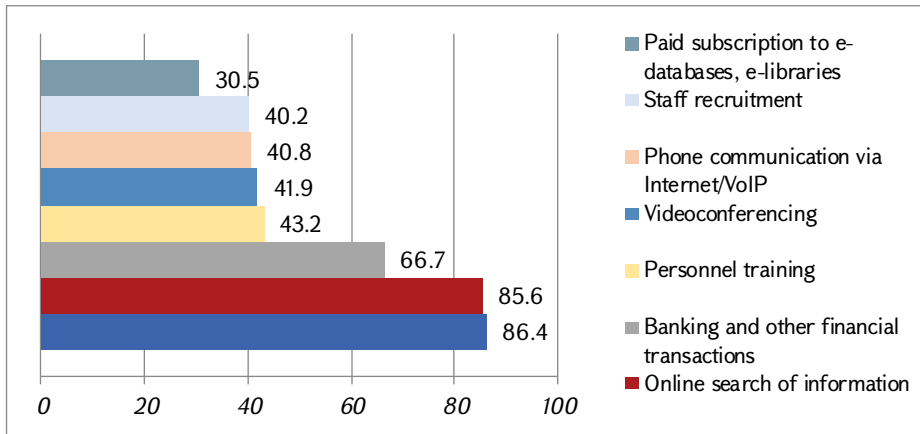

Figure 4. *Enterprises' use of the Internet by purpose*[13]

From Figure 4, it becomes obvious that the majority of enterprises use the Internet to send e-mails and search for information online. And the least they use the Internet for using databases and recruiting staff.

In general, each media or social platform has its own features for diversification and could be used differently by different businesses. From a business perspective, social media can help to connect companies with customers in more efficient ways, such as:

- Lowering companies' marketing costs. One study estimates that marketing costs can be lowered by up to 57 per cent for manufacturing and service small and medium-sized enterprises (SMEs).[14]
- Providing a straightforward channel for customer feedback that can be used for product innovations[15].
- Easing access to markets by decreasing the perceived distance between buyer and seller, making it easier to trade[16].
- Lowering the cost of hiring, increasing the base for recruitment, and facilitating better matching between employer and potential employees. For

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[13] Pocket Data Book / G. Abdrakhmanova, A. Demyanova, S. Fridlyanova et al.; L. Gokhberg (ed.); National Research University Higher School of Economics. Moscow : HSE

[14] Asia Pacific MSME Trade Coalition (AMTC) (2018), *Micro-Revolution: The NewStakeholders of Trade in APAC.* Singapore: AMTC, https://static1.squarespace.com/static/5393d501e4b0643446abd228/t/5a80fe5a4192024c49bd9e0a/1518403194740/AMTCDigitalTradeFeb2018.PDF

[15] OECD (2019), *SME and Entrepreneurship Outlook.* Retrieved from: https://www.oecd.org/industry/oecd-sme-and-entrepreneurship-outlook-2019-34907e9c-en.htm

[16] McKinsey & Company (2016), *Digital Globalization: The New Era of Global Flows.* https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20globalization%20The%20new%20era%20of%20global%20flows/MGI-Digital-globalization-Fullreport.ashx

example, online recruitment has been found to be 70 per cent faster and up to 90 per cent cheaper than traditional recruitment, e.g. newspapers[17].
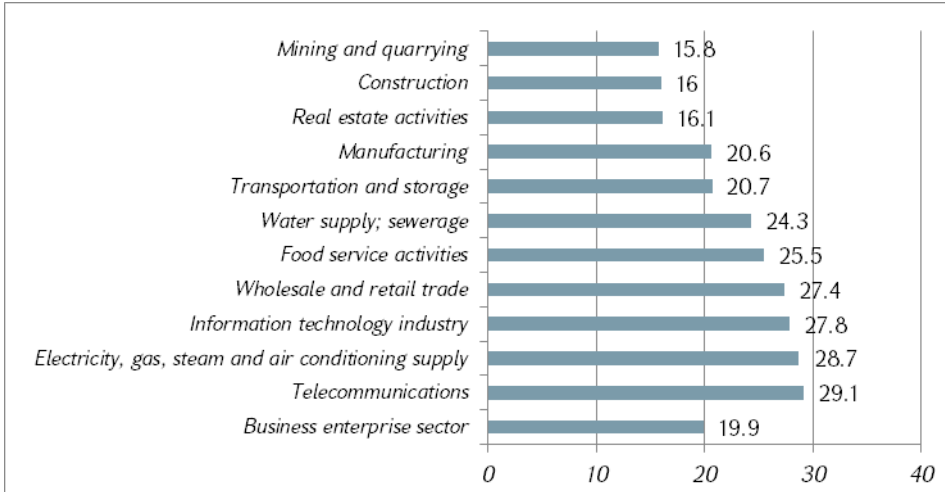

Figure 5. *Enterprises' Internet activities related to purchasing goods or services(%)*

The tables show the options for the use of the Internet by enterprises in the process of image digital transformation by purchase and sale. This makes possible to distinguish the types of activities most frequently used during digitization.
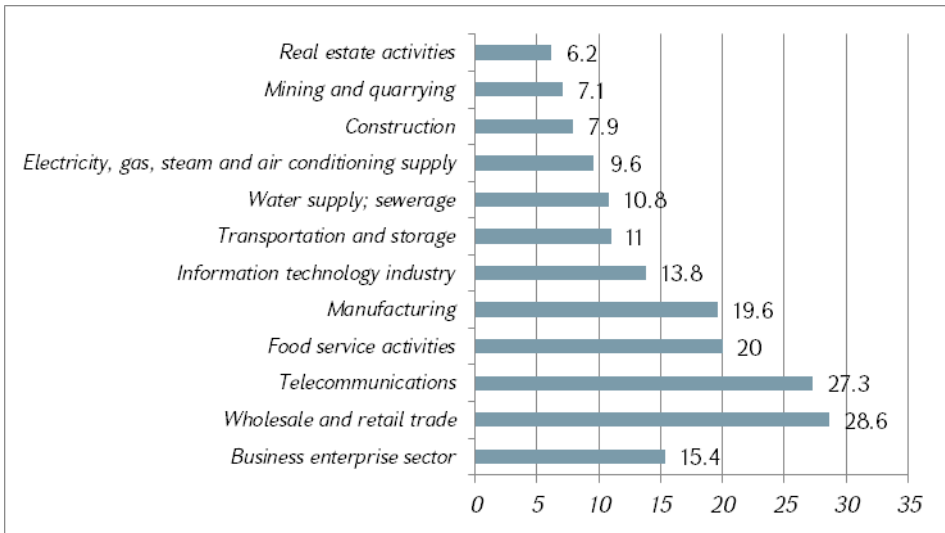

Figure 6. *Enterprises' Internet activities related to selling goods or services(%)*

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[17] International Monetary Fund (2018), *Measuring the Digital Economy*,
ttps://www.imf.org/en/Publications/Policy-Papers/Issues/2018/04/03/022818-measuring-the-digital-economy

The telecommunications sector accounts for most of the Internet activity for business purchases of goods or services, with the mining industry accounting for the least. As for sales, the majority of internet sales activity is in retail and wholesale trade, telecommunications, and the least is real estate activity.

The **Customer relationship management (CRM)** system is a complex of tools working with information that allow to automate, optimize and increase the efficiency of business processes aimed at improving customer relations based on the individual wishes of each customer. And the CRM solution is a set of tools working with information, which includes a database on customers, as well as a number of methods that allow to coordinate data and determine the correct and effective sequence of work with them. CRM is considered one of the four main digital firm management systems, along with Supply Chain/Network Management (SC MS), Enterprise Management (EM), Knowledge Management (KMS) Systems. CRM is a broad concept as well as a business strategy that encompasses the means an organization uses to manage customer relationships.

The following facts can be considered prerequisites for the creation of a CRM system.

- On average, the costs to attract new customers are 5 times higher than the costs to retain existing customers.
- Most international organizations lose 50% of their customers every 5 years.
- A customer satisfied with the services provided will tell about the good service to an average of 5 acquaintances, and an unsatisfied customer to at least 10 acquaintances.
- By increasing the costs of maintaining old customers by 5%, the company's income will increase by 50-100%.
- The implementation of a CRM system promises a 10% increase in the organization's income, and an increase in the profitability of projects by 200-800% within 2-3 years.
- Identification of more profitable customers.

The following 3 functions of the CRM system can be distinguished: **operational, analytical, collaborative.**

A **functional CRM** system deals with typical business operations, including customer service, order management, invoicing, as well as sales, marketing automation and management.

An **analytical CRM** system is closely related to a functional CRM system. It includes activities that acquire, store, process, interpret and report customer data to the user, who then analyzes it as needed.

The **Collaborative (CRM)** system implies some kind of direct contact with customers. It may include: website visits, e-mail contact, telephone contact, etc. This type of CRM system is often called self-service because it is involved when a customer uses the Internet, e-mail, telephone, or some other automated system to obtain information or complete activities. The CRM system works as follows: let's consider the example of a medium-sized enterprise, which has hundreds of customers, some of them regularly use the organization's products, and the other part rarely uses the products provided, or only made purchases once. A

potential client contacts the trade department and is scheduled to meet at the organization. After submitting the list of products that he wants to purchase to the organization, until all the documents are ready, an interview is conducted with the client to find out the purpose of the purchases, the demand for the given type of products, the source of obtaining information about the given organization, the reasons for preferring this particular organization: price , quality, delivery dates, etc. All these data are entered into a unified data system. Statistical analyzes and data processing are performed depending on the volume of orders. As a result of the analysis, a large number of useful information can be obtained. Then, on the basis of the collected information, deep conclusions can be made. If, for example, it turns out that the given customer has refused the services of a competing organization, then the reason can be found out, and similar mistakes should not be made in order not to lose the customer. And if information has been recorded that the given client has started using the services of a competing organization, then on the basis of the database it is possible to restore the "value" of that client for the organization, and if it is quite high, then appropriate steps should be taken to attract his attention again. For example, an individual discount system can be provided, or an opportunity to make payments in installments can be created .

Although the entire organization will rely on both ERP and CRM systems, the fundamental difference between ERP and CRM is that ERP is primarily for financial data and the finance department, while in CRM is customer data that can be used by sales and customer service departments. Consequently, enterprises decide the question of preference for their use based on the type of their activity.
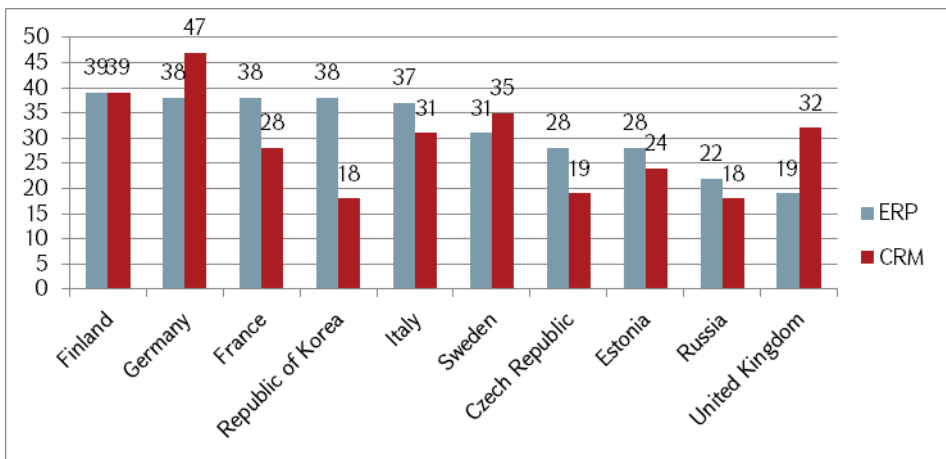

Figure 7. *Enterprises' use of ERP, CRM software by country (%)*[18]

The leading countries using CRM system are Germany, Finland, Sweden, and ERP system - Germany, Finland, France, Republic of Korea, etc.

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[18] Pocket Data Book / G. Abdrakhmanova, A. Demyanova, S. Fridlyanova et al.; L. Gokhberg (ed.); National Research University Higher School of Economics. Moscow : HSE

Conclusion: All of the above- mentioned systems have both advantages and disadvantages. One of the advantages of the ERP system is the reduction of the number of production processes and the production time, and one of the disadvantages is that the lack of close connections between the customer's and the supplier's information systems allows the customer to easily change the supplier. The benefits of implementing a CRM system from the point of view of both the organization and the customers can be coordinated in several groups, among which are: increasing the company's income, customer-oriented approach, attracting new customers, providing services and products to customers. One of the shortcomings of the CRM system is that the sources of information collection are not yet grouped in a unified database.

In the international market, the amount of money circulating for the CRM system is billions of dollars, and its investment will be approximately one hundred thousand dollars on average. As for the implementation of automated systems in the Republic of Armenia, since their implementation is still insignificant in Armenia, more comprehensive digital data and analyses about automated systems are missing. In Armenia, there is already a trend towards the implementation of the CRM system. Armenian Software Company, ArmenTel CJSC, Ameria Bank, Armenian Datacom Company and a number of other organizations are among the organizations operating in the Armenian market that have implemented the CRM system. At the same time, polls among organizations show that this sector still has a long way to go for the development in Armenia.

For the development of any business, it is necessary to develop the right strategy and invest appropriate funds. The prerequisite for a successful business is the ability to attract and retain profitable customers. In the RA, the implementation of 2 automated systems is encouraged. For example, if the information about potential customers and contacts is entered into the CRM system, then if it is indicated at which stage of negotiations each of them is, and the information obtained as a result of negotiations and transactions is entered, then it will be possible to immediately obtain the sales model in the sales management system, where, accumulating certain statistical data will enable the manager to make a forecast about sales.

Thus, the business digitization transformation model means that all information is updated in real time and the awareness and assimilation of the patterns presented by the digital business by the Armenian business will help to facilitate the entry and then to regulate the activities as much as possible on the e-business platform, expanding the limited capacity characteristic of different sectors of the RA market.

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ԱՐՄԵՆ ՔԹՈՅԱՆ
Հայաստանի պետական տնտեսագիտական համալսարանի
վիճակագրության ամբիոնի վարիչ, տնտեսագիտության թեկնածու

ԵԼԵՆԱ ՄԱՆՈՒԿՅԱՆ
Հայաստանի պետական տնտեսագիտական համալսարանի
տնտեսամաթեմատիկական մեթոդների
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ԱՆՆԱ ՄԱՏԻՆՅԱՆ
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վիճակագրության ամբիոնի դասախոս

ՄԱՐԻԱՄ ՀԱՐՈՒԹՅՈՒՆՅԱՆ
Հայաստանի պետական տնտեսագիտական համալսարանի
կառավարման ամբիոնի հայցորդ

ԱՆՈՒՇ ԲԱՐՍԵՂՅԱՆ
Հայաստանի պետական տնտեսագիտական համալսարանի
«Կիրառական վիճակագրություն և տվյալների գիտություն»
մագիստրոսական ծրագրի ուսանող

Բիզնես մոդելները թվային փոխակերպման պայմաններում.– Թվային փոխակերպումը ենթադրում է կազմակերպչական փոխոխություն թվային տեխնոլոգիաների և նոր բիզնես մոդելների կիրառմամբ՝ արդյունավետությունը բարելավելու նպատակով: Ըստ մեկ այլ սահմանման՝ եթե փորձենք համեմատել «թվային փոխակերպում» և «թվայնացում» հասկացությունները, ապա առաջինը ներառում է ընկերության ներքային բիզնես մոդելի, դրա ռազմավարության և արժեքների, հաճախորդների և մատակարարների հետ փոխգործակցության ուղիների փոխոխություն՝ թվային տեխնոլոգիաների կիրառմամբ: Միևնույն ժամանակ, եթե թվայնացումը հիմնված է որևէ տեխնոլոգիայի վրա, ապա փոխակերպումը պետք է ուղղված լինի դեպի հաճախորդը և իրականացվի ավտոմատացված համակարգերի ներդրման ու օգտագործման պայմաններում: Այս մոտեցումների հստակեցումը որակարգային նշանակություն ունի գործարար միջավայրի թվային փոխակերպման անցման համար, ինչին էլ նվիրված է սույն հոդվածը:

Հոդվածում ներկայացվել են գործարար միջավայրի թվային փոխակերպման մոտեցումները, փուլերը, մակարդակները, նոր բիզնես մոդելների դերը թվային տնտեսության պայմաններում, ինչպես նաև ուսումնասիրվել են բիզնեսի թվայնացման ինդեքսի փոխոխություններն ու ավտոմատաց-

ված համակարգերի ներդրման և օգտագործման հիմնահար-
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***Бизнес-модели в условиях цифровой трансформа-
ции.*–** Цифровая трансформация подразумевает организа-
ционные изменения с использованием цифровых технологий
и новых бизнес-моделей с целью повышения эффективнос-
ти. Согласно другому определению, если попытаться сопоста-
вить понятия «цифровая трансформация» и «цифровизация»,
то цифровая трансформация включает в себя изменение
действующей бизнес-модели компании, ее стратегии и цен-
ностей, способов взаимодействия с клиентами и поставщи-
ками с использованием цифровых технологий. При этом,
если цифровизация базируется на какой-то технологии, то
трансформация должна быть направлена на клиента (заказ-
чика) и осуществляться в условиях внедрения и использо-
вания автоматизированных систем. Уточнение этих подходов
имеет важное значение для перехода к цифровой трансфор-
мации бизнес-среды, чему и посвящена данная статья.

В статье представлены подходы, этапы, уровни цифровой трансформации бизнес-среды, роль новых бизнес-моделей в условиях цифровой экономики, а также изучены изменения индекса цифровизации бизнеса, рассмотрены вопросы внедрения и использования автоматизированных систем.