

THE THEORETICAL BASIS FOR THE RESEARCH OF "E-BUSINESS" CONCEPT

Ph.D. Student, Anna RADINA

Taras Shevchenko National University of Kyiv, Ukraine

E-mail: anna.radina15@gmail.com

Abstract. *Modern business evolves under the powerful influence of information technologies, which in the most developed organizations are embedded in almost every business process. The functions of marketing, financial management, resource management, communication with suppliers and customers along the entire added value chain are to some extent supported by the Internet and by related software. Due to the development of technologies, new business models and even whole industries have been formed recently, created by the opportunities provided by e-business. Given the significant number of both positive and risk factors which this phenomenon brings to the world economy, it is extremely important to understand the essence of it. Currently, achievements in the study of e-business and its functioning are mostly practical, and research takes place primarily in the business environment. There are no economic theories at the moment which consider its genesis and activity, so the analysis of the theoretical and methodological basis of this concept is of particular priority. The aim of this article is to identify the essence of the e-business concept, its place in the economic system, as well as to determine the extent to which its processes could be integrated into the existing economic theoretical basis.*

Key words: *e-business theory, e-commerce, information and communication technologies, digital economy.*

JEL Classification: *O30, M15, F23.*

1. Recent research and publications

The biggest attention to the issue of e-business is paid in the Western European scientific literature. The research mainly concerns only some of its elements and almost does not include analysis of the theoretical and methodological basis. For example, mostly we are talking about e-commerce (Laudon and Traver, 2017, p. 106), financial technology (Brown, 2020, p.320; Chishti and Barberis, 2016, p.312), cloud technology (Erl, 2013, p.528; Weinman, 2012, p.438). Of particular importance in e-business research are also studies of international organizations and multinational companies (MNCs), such as European Parliament reports on the legal framework for e-commerce, UNCTAD research on information economy, KPMG - on fintech, Deloitte - on artificial intelligence, Ecommerce Europe - on regional e-commerce. Among the representatives of the Commonwealth of Independent States scientific community the issues of e-commerce were discussed by Kargina and Lebedeva (2016, pp.60-63), stages of e-business development – by Epifanov and Atarov (2016, p.106), e-business models – by Trachuk (2015, p.58), Linder and Zichermann (2014, p. 272), e-business management – by Chaffey and Hemphill (2019, p. 680).

Among domestic scientists the phenomenon of e-business was studied by: Balabanov (2001, p.336), Strakharchuk (2010, p. 515) and Zaiceva (2015, p.264), who studied the principles of e-business, Malovichko (2016, p. 394), Melnichuk (2014, p. 93), Tetrychnyy (2021, p. 241), who focused on e-commerce, Vorobyova (2012, p. 20), who researched e-business in public administration

2. Interpretation of the e-business concept.

For a basic understanding of the issue, it is useful to give some examples of interpretation for e-business concept, which are the most well-known in the business environment. It is worth noting that its mechanisms have expanded over time, as has their perception by the scientific and business community, based on progress in the diffusion of innovation and technology. Historical development in this context was once stimulated by various technologies, from the emergence of electronic data interchange, automated

incoming order system, to e-shops, industrial networks and marketplaces, cloud technology and artificial intelligence.

Referring to the origins of the e-business vision existing today, one should turn to the IBM marketing campaign, which advertised a number of computerized procedures for business process automation. As we know, in late 1997, an information technologies (IT) consulting firm published an article in the Wall Street Journal and used this term to describe how corporate systems will change dramatically in the digital age. IBM then understood e-business as "rethinking strategic business processes and approaching the challenges of a new market based on knowledge and characterized by globalization." That is to say, business entities perceived this phenomenon in the context of a new business challenge, to which it is necessary to adjust business processes and relationships with stakeholders. This definition is extremely general, so it is still relevant for today's stage of e-business development.

E-business as a process of adaptation was similarly presented in the interpretations of scientists as follows. In 2000, M. Earl stated that e-business is a mechanism for reengineering and restructuring business processes to meet customer expectations in the new economy. In 2001, El Covey noted that e-business was a rethinking and restructuring of business processes at the production and supply chain levels to take advantage of the Internet and new ways to create value.

Another group of economists specially emphasized on Internet technologies as a key feature of e-business. Schneider (2002, p.342) understood e-business as an entrepreneurial activity carried out using electronic data transmission technologies, such as those used on the Internet and in the World Wide Web. Ribbers (2006, p.455) considered e-business as conducting automated business transactions through electronic communications networks (over the Internet and / or possibly private networks) from the beginning to the end. Fedyshyn (2016, p.12) noted that e-business is a type of economic activity of companies through computer networks in order to make a profit.

Other scientists saw this term as a tool to increase efficiency of individual transactions or processes. For example, Laudon and Trevor (2008, p.13) defined e-business as a concept which is seen primarily as digital support for transactions and processes within the firm, including an information system controlled by the firm. In 2011, these authors also singled out e-commerce as the use of the Internet for business transactions, as commercial transactions between organizations and/or individuals which are supported digitally.

It is also worth mentioning the Cambridge Dictionary as the most well-known result of contemporary research in this field, which distinguishes two ways of e-business interpretation:

1. purchase and sale of goods and services in the Internet, or a certain company which conducts this activity;
2. a business that operates in the Internet.

Similarly, the phenomenon of e-business is described in the work of economists Turban, King, Viehland and Lee (2006, p. 590). It is important to understand that e-business is a phenomenon related to the extended concept of e-commerce, not only the sale and purchase of goods and services, but also customer service, cooperation with business partners and electronic transactions within the organization. This double definition eliminates inaccuracies in economic research about understanding the concepts of e-business and e-commerce, which have often been used interchangeably, causing some sort of conflict. This problem persists to this day, so these concepts should be clearly distinguished. Sometimes the term e-commerce is used in the sense of e-business. A simplified, narrower definition of e-commerce is limited to buying and selling goods

online. Thus, the traditional concept of e-business is quite broad and in most cases may include e-commerce as one of the processes of its implementation. In addition, e-business can include e-marketing, sales promotion, inventory management, search engine optimization, financial management, personnel and more.

Summarizing the ideas of these works, the concept of e-business can be described as the automation and optimization of internal and external business processes in the computer network, in particular innovative IT support of the company in order to increase competitiveness, to create additional value for customers through computer-mediated network and is in some cases a critical competitive strategy.

1. The place of e-business in the economic theory

So, it is very difficult to distinguish the boundaries of e-business in the national economy, as there are a large number of its areas, which are very closely interrelated with other types of economic activity. In this regard, authors of most scientific papers try to identify the basic components of e-business system, the separation of which contributes to a better study of its features and determinants. In the context of identifying the place of e-business in the theoretical system of international economics and international business, it is advisable to focus on its structural relationship with other elements of the economic system.

In this regard, e-business as an activity is a subsystem of business in general, both international and local, and therefore it is logical to assume the relevance of using business theories to study its electronic processes. E-business tools provide a number of benefits to companies, regardless of the number of countries in which it has a branch, there are many examples of different scales of enterprises operating e-business within one state or more. However, the defining feature of e-business is the almost complete absence of borders between countries in the global information network, and therefore e-business processes are primarily a product and part of the system of international rather than local business.

Well known is the fact that the basic concept of the very nature of business has been studied by the classics of economics, and since then basic characteristics of this phenomenon have not changed significantly. And of course, the most outstanding ideas in the history of economic doctrines presented by Smith, Ricardo, Marx, Marshall and Keynes remain relevant for explaining modern economic processes in the form of neoclassical economic theory, neo-institutionalism, neo-marxism (Lavrov, 2007, p. 48). E-business as a subsystem of international business, should be studied by synthesis of existing theories in this area, as its field of influence and opportunities for its implementation covers almost all functions of the company and changes the specifics of market regulation at both national and international levels.

Just as the formation of the international business theory took place on the basis of separate currents of general economics - firm growth theory, innovation theory, competitiveness theory, international capital movement theory, international trade, strategic management, network economy (Rogach, 2018, p. 25), so the theoretical ideas about e-business have developed too mostly due to individual theories. Among them, the concept of digital economy, the theory of new growth, the theory of transaction costs, the theory of network externalities and agency costs, institutional change model, the theory of technology diffusion, technological and organizational environment, the system theory, strategic networks and others. Therefore, the postulates application of one school of economic thought to the e-business study is possible, but insufficient for research completeness.

2. E-business concept from different schools of economic thought point of view

In search of a relevant basis for the development of e-business theory, it is worth noting, that neoclassical school has slightly different focus, it is directed mostly on the macro level, on trade and investment relations between countries, and not on the activities of international companies. However, if we consider the environment of e-business companies and their impact on the market as a system, the neoclassical school provides a certain foundation for this. As we know, the high level of information openness and flexibility of decision-making creates intense competition and imposes new requirements for business development. With emerging e-business, the market is increasingly approaching to the model of perfect competition with new standards of competitiveness, cost structure and profits of manufacturers. In such circumstances, the neoclassical desire to limit market regulation has become the only possible scenario, as e-business system has gone beyond traditional legislation. Barriers between national markets are significantly reduced, the legal framework for Internet business regulation is almost non-existent, and market relations are largely determined by supply and demand. The peculiarity of e-business is that the role of the product is played by information and electronic communications, which greatly increase the economic effect of transactions. In such conditions, economic and mathematical modeling, which is the core of the neoclassical school methodology, becomes crucial, because there is a need to control and analyze huge amount of information that has become available to participants in the business environment. But neoclassical theory can be applied only in part, given that a number of basic assumptions do not correspond to the reality of the electronic market, such as given conditions of activity (information perfection/symmetry, complete rationality of behavior, price stability), ignorance of the internal organization's features (organizational structure, internal management), lack of alternatives in the choice of solutions.

Neo-institutionalism however is based on the fact that the firm is a complex hierarchical structure operating in market uncertainty, and the main task of the analysis is to explain the firm behavior in the system of expensive and incomplete information. He also suggests that any economic action is inextricably linked with non-productive costs, so in a global economy competition is shifting to the non-productive sphere, which we see with the development of e-business mechanisms. As a result, the market potential to reduce transaction costs significantly exceeds the potential to reduce production costs and the information factor comes first. For example, Kenneth Arrow (1999, p. 203) points out that information is an economic category, that is, a commodity which has value and that the economic role of information is to reduce uncertainty and prevent tax losses.

Despite the conformity of some theoretical concepts to the conditions of e-business existence, only few have a direct mention of it. Mostly the notion of information, technology, innovation remains the main topic. For example, Paul Romer's (1996) theory of new growth, which is an important contribution to the development of a modern economic school, focuses on technologies as a basis for economic growth and their dependence on research and development (R&D) investment. This vision raises the question about the correlation of e-business level in a given country on its investment in R&D, which requires further research to create an effective government strategy in order to stimulate digital growth.

E-business as a set of methods and approaches used to benefit from the introduction of innovative information technologies, including the Internet, should be considered in more detail in terms of transaction cost theory (Williamson, 1993; Coase, 1937). The theory explains existence of the firm by the desire to avoid the cost of market operations, and argues that the firm will expand until the marginal cost of the transaction within the

firm is equal to the cost of the same transaction in the open market. Given the impressive speed of technology development, the trend to coordinate activities electronically will continue. In this case, it is advisable to define e-business as a management structure built through a sequence of contractual relations between stakeholders and aimed at continuously creating added value and, consequently, benefits for these stakeholders. From the other side, given that all transaction costs are reduced, both within the firm and in the open market, cooperation and outsourcing contracts have become more available and therefore widespread.

According to the approach of transaction cost theory, e-business technologies on the one hand reduce the cost of organizing intra-firm interaction, which allows to offer a more competitive product or service, and on the other hand, make it easier to order goods and services (or sell them) from outside the market. Both MNCs and small and medium enterprises (SMEs) are stimulated as barriers to market entry and to key stakeholders become lower. This phenomenon will have a particularly noticeable impact on electronic market platforms, which, in contrast to individual interactions, can significantly simplify the choice and reduce the asymmetry of information for its participants. As a result of saving or eliminating costs, the role of intermediaries between the supplier and the customer is totally transformed. Given the existence of large online platforms with transparent prices and the ability to compare at least the declared characteristics of goods and services, the number of wholesalers and retailers required for the functioning of the market is significantly reduced, their market acquires the characteristics of an oligopoly. Today, on average, two or three online platforms cover most of the services in a particular industry in one country or even region.

From the internalization school of economic thought point of view, as the development of Coase's idea, the phenomenon of e-business can be considered, among other things, as result of modification of organizational and managerial forms of large companies, including MNCs, as a tool and in the same time a consequence of global expansion. Thus, the concept of the global factory by Buckley (2009, p. 131), studying the reasons for the networks formation, argues this process is caused by resolving of the contradiction between the limited capabilities of traditional MNCs organizational structures and the pursuit for rapid response to changing market conditions. Buckley also singles out the need to develop the appropriate economic policy of countries, for which is important to study the determinants of the MNC networks location, as an example, mentioning the particular qualities of the cultural environment. This approach can be successfully complemented by the use of Hofstede's concept of cultural dimensions, which provides a more detailed consideration of cultures. In the case of e-business, for example, the level of individualism and uncertainty avoidance can have a significant impact.

E-business as a component of the digital economy falls into the line with its principles and features, so the theoretical foundations of its research comprise also the works of Castells (2007, p. 304), Kelly (1998, p. 2), Shapiro (1999, p. 3) on the economy based on information and digital technology. In many respects, they are close to Bartlett's and Goshal's network theory (1989, p. 328), which focuses on the effects of network interdependencies and synergies and their impact on the organizational structure of internal relations.

The network externalities theory can be applied to the e-business analysis, because this concept allows to identify certain incentives for the use of its technologies, and therefore a deeper understanding of the nature of e-business growth and its advantages over traditional. Considering the phenomenon of e-business through the prism of the network effects idea, we can identify all of network patterns, such as market size effect, crisis of coordination, the imitation effect, of market diversity, the reinforcement effect

(Bonaccorsi and Rossi, 2002, p. 12). As a result of these, the value of technologies such as e-commerce at any given time is dependent on the number of accepted e-sales and e-purchases. Consumers of goods base their decision to buy on the expected size of the network, and firms take into account not only the current but also the future number of its users, the behavior of other agents in their competitive system.

A promising course for the development of the theoretical basis of e-business and of the value it creates is a resource based view to the study of economics (Barney, 1991, p. 99). It is used to explain how firms create value from information technology assets and how stability depends on available information technology skills rather than on those technologies themselves. Such information technologies bring better results when collaborating with other IT resources, achieving synergies. The theory considers them as an opportunity to create sustainable competitive advantages.

Although many scientists claim that e-business is transforming the global economy, it has a significant impact on only a few countries, particularly the United States of America and the People's Republic of China. Low rates of development in other regions are not yet sufficiently justified by economics. In addition, some emerging economies, such as the United Arab Emirates, Singapore, and Bahrain, have performed much better than others in digitalization of their businesses and economy as a whole. The resource approach can find a causal link between contextual factors, e-business use, and enterprise performance. Especially widely adopted at present are approaches to combine the resource based view with theory of technological and organizational environment, which performs the subject analysis on the base of technological, organizational and environmental factors.

3. Conclusion.

The main results of the study can be combined into the following three theses.

1. Currently the economic literature has a great variety of approaches to the study of the e-business concept, each focuses on its individual properties. E-business can be seen as a set of business processes, as a mechanism for integrating intra-firm functions, as well as links with stakeholders, as a global network that provides access to customers, suppliers, competitors and payment services, as a system of resources and technologies. All these approaches exist in the modern economic system and highlight one of the aspects of the studied phenomenon. These concepts and theories, as well as their diversity, argue that e-business, like information and communication technologies in general, has many uses and can take different forms.

2. Analyzing the evolution of approaches to the identification of this concept, we can see primarily a change in the scale of influence - from the usual purchase and sale on the Internet, to the presence of an electronic component in all business processes. And if the first attempts to define e-business saw it only as a way to make a profit through a website, today, given the mentioned aspects of its operation, it is appropriate to formulate this concept as follows: as support and streamlining of business activities using the tools of information and communication technologies that increases the efficiency of the company as a whole and the synergistic effect by integrating business processes into a single digital economy.

3. From the theoretical point of view, it is most appropriate to consider e-business from the standpoint of neo-institutional school of economic thought - network theory, internalization theory, transaction cost theory, new growth theory, because it emphasizes on the information factor and takes into account the relevant prerequisites of the firm in today's business environment. In addition, the foundation of e-business theory could be formed based on the concept of digital economy, the theory of innovation diffusion, theory of technological and organizational environment. Significant potential for

future research lies within the resource based view, in particular for the analysis of determinants of e-business development in different countries or regions.

References:

1. Bonaccorsi, A. and Rossi, C., 2002. *The adoption of business to business e-commerce: Heterogeneity and network externality effects*, LEM Working Paper Series, Pisa.
2. Earl, M., 2000. Evolving the e-business. *Business Strategy Review*, 11(2).
3. Fedyshyn, I.B., 2016. *Electronic business and electronic commerce*. Ternopil.
4. Laudon, K. and Traver, C., 2011. *E-Commerce. Business. Technology. Society*, 7th European ed., Pearson Education Limited, Harlow.
5. Lee, I., 2008. *Electronic Business: Concepts, Methodologies, Tools, and Applications* - IGI Global.
6. Malovichko, S.V., 2016. *Theory and methodology of e-commerce enterprises management*.
7. Papazoglou, M. and Ribbers, P., 2006. *E-Business: Organizational and Technical Foundations*, John Wiley & Sons, Chichester.
8. Pilevich, D.S., 2019. Theoretical basis of e-business development. *BusinessInform Economy*, 5.
9. Rogach, O., 2018. *Theories of international business: a textbook for students of economic specialties of higher educational institutions*. Kyiv.
10. Wigand, R.T., 1997. *Electronic Commerce: Definition, Theory, and Context, The Information Society*.