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FORMATION OF THE ENTREPRENEURSHIP MODEL OF E-BUSINESS IN THE CONTEXT OF THE INTRODUCTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES

**Aleksy Kwilinski, London Academy of Science and Business
Nataliya Dalevska, Institute for International Cooperation Development
Sergey Kravchenko, Institute for International Cooperation Development
Ihor Hroznyi, Institute for International Cooperation Development
Olena Kovalenko, Zaporizhzhia State Engineering Academy**

ABSTRACT

The constructed e-business company entrepreneurship model, including the main components of the internal environment, reflects the influence of external factors. The components of the internal environment of e-business company are analyzed in four blocks: product, consumer interface, infrastructure management, financial aspects. The challenges faced by managers of e-business companies in Poland are grouped according to the components of the external and internal environment. A Matrix of market relations types using information and communication technologies is formed with the use of four participants: B (Business), C (Consumer), G (Government), E (Employee). Each of the presented types of interaction in the constructed Matrix is entrepreneurship model that has its own efficiency and is capable to generate income.

Keywords: E-Commerce, Entrepreneurship Model, Virtual Workplace, E-Platform, Distribution Channels.

JEL Classifications: I2, F6

INTRODUCTION

Since the end of the twentieth century, which was marked by the invention and introduction of the Internet in almost all spheres of public life, a new type of business has begun to rapidly develop in the global economy e-commerce. The use of network technologies in economic activities is due to the significant competitive advantages that electronic business has gained as a result of their implementation.

Through the use of the Internet, e-commerce companies have been able to maintain their presence in every corner of the world where the global network is available. E-commerce enterprises have the opportunity to continuously improve their competitiveness due to the wide choice of goods and services offered to the end user; as well as “*reducing the distance*” between the manufacturer and the end user through the use of new approaches to business making.

REVIEW OF PREVIOUS STUDIES

In order to determine the main components of a company model operating in the e-business, Valmohammadi & Dashti (2016) created an ontological e-business model, which was later developed by determining the influence of its individual components on the business strategy, organizational structure of the company and available technological resources. These factors, in turn, have changed the technological component of e-business, the impact on users of information on the main aspects of e-business, the competitive advantages of e-business companies in the market, and, indirectly, the legislation in force at the location of the company (Karpenko et al., 2018).

Continuing studies in the direction of models formation describing the structure and features of the activities of e-business companies, Tetiana et al. (2018) developed a cause-and-effect contour model of e-business companies. In contrast to the previous model, which reflects the components of e-business company, the cause-and-effect contour model illustrates the relationships between system components arising in the course of its operation in the direct and reverse directions. With the help of the cause-and-effect contour model, one can measure the magnitude of the influence of some components on others in the process of their interaction (Kwilinski, 2018).

This study was conducted on the basis of an analysis of the data of companies of e-business leaders, which include Dell, Amazon.com and eBay.

Further studies of business models of e-business companies were aimed at models formation which goal is to determine the value of e-business companies, their constituents and approaches to the assessment of individual components (Inna et al., 2018; Tetiana et al., 2018a; Soto-Acosta et al., 2016). Also, the ontological model of e-business companies was adapted for small and medium-sized business (Nakashydzhe & Gil'orme, 2015; Grinko et al., 2017; Lakhno et al., 2018).

In addition to the internal environment of e-business companies study, Wang et al. (2016) pay much attention to the external factors affecting the activities of these companies.

In particular, Turban et al. (2017) considered the impact of the following four groups of factors on the activities of e-business companies as: the special characteristics of the country of location of the company, including the level of corruption and the level of human capital development; the level of development of the country and its impact on e-business companies; the business environment development; the level of technological development (Kuznyetsova & Pogorelenko, 2018).

METHODOLOGY

The methodological and theoretical basis of the study is the scientific and creative comprehension of the achievements of scientists. The study was carried out on the basis of the theory of scientific knowledge using a systematic approach to the study of phenomena and processes of economic activity. In order to achieve the goal set in the work, a set of general scientific methods (analysis, synthesis, induction, deduction, abstraction) and methodological techniques (systematization, generalization, review, comparison) of e-business companies study in the information economy were used. The modeling method was applied in the development of e-business company model.

Situational modeling relies on the rigor of theoretical approaches, but additionally contains a means of varying the conditions “*contrary to*” formal constraints. From a technical

standpoint, the last addition as a modeling tool appeared precisely in recent years thanks to the development of computer applications (object-oriented programming, case-technologies, graphical interface and other visualization tools). In response to the development of these possibilities, kind of another theoretically designed apparatus is drawn near: probabilistic modeling, fuzzy logic.

RESULTS AND DISCUSSION

E-business is becoming increasingly popular in the economy and is positioned by its supporters as a new business model that will gradually replace all existing ones. Another group of managers believes that the only difference between e-business and offline business is the use of information and communication technologies in the activity of companies, which do not significantly influence the relationships between the company and consumers. In our opinion, the main difference between e-business and other types of business is the use of new forms of interaction between participants in business operations, different from those that have prevailed in business in the past century.

We consider the new forms of interaction between companies, consumers and other counterparties in the electronic environment on the example of trading and manufacturing companies. In an offline environment, commercial companies successfully perform intermediary functions between a manufacturer and an end user by reselling goods purchased from a supplier to end user with a certain level of trade margin. With the development of information and communication technologies, fewer and smaller producers need the services of intermediary trading organizations for the sale of goods to end users, therefore traders should change their approach to the implementation of intermediary trading activities.

Thanks to the model formed (Country-Business-Technological-Government (CBTG)), which includes the impact of the external environment on e-business companies, priority factors of influence to the development of e-business companies in different countries were identified (Wang et al., 2016). According to the study, the development of e-business is most influenced by the technological level of the country's development; in second place is the influence of the country; such factors as special characteristics of the country and development of the business environment in the country have almost the same degree of influence.

Based on the above models, we created the author's model of e-business company, which includes the main components of the internal environment, reflects the influence of the external factors on it, and is typical for e-business companies in Poland. The use of international experience in e-business company models formation helped to identify a greater number of components of the internal environment characteristic or such companies, as well as to group the external factors according to features that can be measured quantitatively (Table 1) according to the SWOT analysis. Characteristics of the components of the internal environment are shown in Table 2.

External environment of e-business companies	Internal environment of e-business companies
Special characteristics of the country	Product
Administration of government	Consumer interface
Business environment	Infrastructure management
Technologies	Financial aspects

Main blocks	Components	Characteristics
Product	Cost of goods	The cost of a product or service is offered to the end user, which includes all items of value to the customer.
Consumer interface	Target audience	Each company operating in the field of e-business must determine the target audience, which is aimed at the company.
	Sales channels	Methods of interaction with the customer.
	Relations with consumers	Ways of communication between the company and consumers, which are defined, created, organized and managed by the company.
Infrastructure management	Cost structure	Determination of the list and cost of resources necessary for the effective operation of the company.
	Possibilities	Company's ability to adhere to a specific strategy and carry out a daily list of actions aimed at creating value for the end user.
	Partnership	Way of interaction between two or more companies in order to create greater value for the end user.
Financial aspects	Cost structure	List of current and potential costs that may be incurred by the company in the economic activity process.
	Income model	Identification of various sources of company income in the overall income structure.

Determining the influence of the components of the external and the internal environment on the efficiency of e-business companies, it is worth noting that e-business managers who work in Poland face daily problems characteristic for e-business companies in developing countries (Table 3).

Components of the environment	Challenges and problems	International experience in solving problems
External environment		
Administration of government	Trade barriers. Differences in the legal regulation of trade.	Simplification of the taxation system by value added tax for various types of e-business in the Member States of the European Union.
Business environment	High level of competition in the international market.	The government may require online stores to create different versions of the site with the establishment of different prices for customers from around the world.
Technologies	Insufficient level of infrastructure development.	Creation of a new legislative base, provides for the regulation of trading activities through mobile phones, other devices that will be used in e-business in the near future.
Internal environment		
Product	High prices for goods and restrictions on sale and use of certain types of goods unification of legislation of the Member States of the European Union.	Unification of legislation on e-business between the Member States of the European Union.
Consumer interface	Lack of consumer confidence in companies operating in an electronic environment.	Improvement of the system of personal data protection.

The variety of industries in which e-business companies operate is significant and implies different approaches to the management of these companies. This, in turn, necessitates the development of specific approaches to the management of such companies.

Effective management and interaction of a company with other counterparties occurs on the basis of reliable and timely information for decision-making.

In order to determine the users of information necessary for decision-making, first of all, one should find out the types of market relations in which information and communication technologies are used, and also illustrate examples of the application of individual software products used in their implementation (Table 4).

Participants	B-Business	C-Consumer	G-Government	E-Employee
B-Business	B2B Convisint.com, EDI, EFT, Ariba, SAP, Oracul, Alibaba, Qualcomm.	B2C Yahoo, Amazon, Flipkart.com, Rediff.com, Intel, Dell.	B2G Provision of software development services.	B2E e-training; e-employment; e-HRMS.
C-Consumer	C2B Priceline, portals for job search.	C2C Facebook, eBay.In, OLX, quickr.	C2G Filling in tax returns online.	C2E (at the stage of development).
G-Government	G2B Electronic purchases (tenders).	G2C Interaction of state authorities and citizens.	G2G interaction between central and local government authorities.	G2E (at the stage of development).
E-Employee	E2B telecommunications, outsourcing.	E2C (at the stage of development).	E2G (at the stage of development).	E2E (at the stage of development).

Each of the presented types of interaction can be conventionally called a business model, since it has its own efficiency and is capable to generate income.

The B2B model (business-to-business) is a model of interaction between economic entities in an electronic environment, which implies servicing some economic entities by others. The principle of implementation of this interaction is very simple: the company sells its goods, performs work, provides services to another company. B2B is one of the most promising areas of e-business development. Internet platforms greatly simplify operations at all stages and make business operations more operational and transparent. In cases of B2B interaction, the representative of the customer's side has the ability to interactively monitor the order execution process, working with the vendor's databases.

The meaning of the B2C model (business-to-consumer) is to serve individuals by the business entities. In this case, the company sells goods, performs work, provides services directly to the final consumer. Usually, this entails retailing using online stores. This way of carrying out a commercial operation gives the customer an opportunity to simplify and speed up the purchase procedure: he/she does not have to go to the store to select the right product, just look at the specifications on the seller's website, select the desired configuration and order it with delivery. Internet allows the economic entity to quickly track end-users demand, their benefits by different product groups, popular ways of delivering and paying for goods. In addition to online stores,

examples of business carried out activity on the B2C model are shopping malls and trading platforms etc.

The B2G model (business-to-government) provides for the interaction of business and administration and includes business connections of commercial structures with government organizations—from local authorities to international organizations. In Poland, the B2G model develops due to the development of e-platforms in which government institutions can carry out purchases in accordance with the legislation on public procurement, purchasing all goods, works and services for the needs of the public sector. The B2G segment covers a wide range of goods and services—stationery, furniture, automobiles, electronic equipment, computers, construction and repair works—everything the government needs to support government offices. The B2G market has its own specifics: in some cases, only large enterprises with relevant production facilities and resources (for example, military industrial enterprises) can receive an order from the state, but this does not mean that small businesses do not have access to B2G.

The B2E model (business-to-employee) is an internally corporate e-business system that allows you to organize the work of the company and conduct joint business activities of employees, individual structures or departments. Such systems are intended to ensure the convenience and attractiveness of highly qualified personnel at e-company, its work on a flexible schedule, provision of training opportunities, social benefits, information about the bonus system, corporate events, etc.

The B2E model includes: creation of virtual work places; use of e-training to improve the skills of employees, due to this, companies save a significant part of the funds required to pay for travel related to training. The use of e-training is economically viable for large companies. For example, for airlines, continuing training of employees of call-centers is relevant. Most often, the C2B model is used on job search portals, where potential employees offer their services to potential employers. Also, there are portals operating according to the specified business model, where some consumers help to find goods or services at the lowest prices for other consumers (these can be both enterprises and individuals).

The G2B model provides for the organization of electronic procurement. The E2B model is used if individual employees can provide services to e-business companies, for example, providing consulting services in a remote format.

These models of relationships between the participants of the economy and the functions that e-business companies carry out allow us to form a list of users of information on e-business, which is necessary for making decisions.

The result of our study complements the existing study. In addition to the internal environment of e-business companies study, Wang et al. (2016) pay much attention to the external factors affecting the activities of these companies.

In particular, Turban et al. (2017) considered the impact of the following four groups of factors on the activities of e-business companies as: the special characteristics of the country of location of the company, including the level of corruption and the level of human capital development; the level of development of the country and its impact on e-business companies; the business environment development; the level of technological development

CONCLUSIONS

Summarizing the consequences of the widespread implementation of information and communication technologies in all sectors of the economy, it was justified the emergence of a

new type of business-electronic. Electronic is characterized by the implementation of information and communication technologies in various types of business processes.

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