

MARKET OF ELECTRONIC EDUCATIONAL RESOURCES IN MODERN RUSSIA

Abstract: This paper analyzes the functioning of the educational resources market in modern Russia. In the theoretical aspect of the study the concept of "e-learning resource", "market of electronic educational resources" are clarified, also the strategy for promotion of e-education of the university in the market of higher education is suggested.

Key words: electronic educational resource, electronic educational resources market, SWOT-analysis of the use of electronic educational resources.

Introduction. The modern economy is characterized by the active formation of the Russian market of electronic educational resources, the improvement of its infrastructure, the development of new information and telecommunications technologies to create the possibility of comfortable access to information resources from anywhere in the space of the country. In addition, it should be noted that a new model of education has gradually formed in Russia, and its hallmark is the unification and standardization of the technologies of e-learning, based on the continuity of the process of learning throughout the active life of individuals. High requirements for the effective functioning of the market of electronic educational resources in the Russian economy set a goal of theoretical understanding of the situation and the need to develop methods of its qualitative use in education.

The objective of the paper is to explore contemporary aspects of the Russian market of electronic educational resources and prospects of its development.

Goals. To implement the objectives of the work it is necessary to solve the following problem: to study of the theoretical foundations of the market of electronic educational resources. To do this, it is necessary to identify the economic substance and nature of the categories of "electronic educational resource", "market of electronic educational resources", which will let us structure the study, detail these concepts in order to systematize and clarify their characteristics for assessing the condition and dynamics of the market of electronic educational resources in Russia. Applied aspect of the study is presented on the example of the Volga State University of Technology.

Interpretation of the results and their analysis. While exploring the modern market of electronic educational resources, it must be recognized that it's rather difficult to cover all the information that makes up its resource by one concept. In the literature and the Internet there are many definitions of the term "electronic educational resource". Formal organizations identify electronic educational resources as training materials, which are used for playing on electronic devices [1]. Others believe that electronic educational resource is a collection of software tools, information, technical and organizational support, electronic publications placed on computer readable media or network [2].

From our point of view, e-learning resource is the educational content invested in electronic form and played by local and network technology through a variety of media.

In Russian and international practice, there are different classifications of electronic educational resources.

According to the Inter-State standard GOST 7.83-2001 there are following types of e-learning resources:

e-document - a document on a computer readable storage medium, for which the computer equipment is necessary;

e-edition - an electronic document (group of electronic documents), held editorial and publishing process for distribution unchanged, having output data [3].

Classification of e-learning resources according to various criteria with regard to the activities of the university are presented in Table 1.

Table 1

Classification of e-learning resources with recommendations for VSUT in following directions

<i>Signs of classification</i>	<i>Forms of e-learning resources</i>	<i>Availability of the resource at VSUT, recommendations</i>
<i>Symbolic nature of the information</i>	<ul style="list-style-type: none"> • <i>text, number, sound, graphics, font and demonstration electronic data;</i> • <i>system, application and service electronic programs;</i> • <i>interactive multimedia and online services (a combination of electronic data and programs).</i> 	<i>All of these types of data, application electronic programs, interactive services are used in the educational process. System and software tools are used to organize information and to support the process.</i>
<i>Intended purpose</i>	<i>The official, scientific, educational, educational, reference</i>	<i>All types of ESM, electronic teaching materials are being developed</i>
<i>Technology of distribution</i>	<i>Local, network and combined distribution</i>	<i>Local and network technologies</i>
<i>Character of interaction between the user and the electronic resource</i>	<i>Determinate and undetermined (interactive)</i>	<i>It is necessary to develop a non-deterministic interaction for feedback</i>
<i>Periodicity</i>	<i>Non-recurrent, serials, periodicals, ongoing and updated</i>	<i>Non-periodic, periodic, updated</i>
<i>The presence of the printed equivalent</i>	<i>Electronic equivalent of the publication; independent electronic publication</i>	<i>All electronic editions have printed analogue</i>

In addition, this study can distinguish types of ESM of definite interest to the university : the electronic training complex, which provides support for all kinds of activities in the program of discipline; the e-learning module, which supports all kinds of activities for section (theme) of the discipline; electronic textbook; electronic book; support workshops , computer models of the studied processes and objects made by using MathCAD Calculation Server, Matlab Web Server , etc.; laboratory practice, providing remote access to real hardware, a virtual laboratory practice; exam modules in sections (topics of disciplines); atlas of structures and components, including three-dimensional graphics, processing and visualization of results of studies, computer trainers, databases for educational purposes; computer aided design software [4].

The above types of electronic educational resources undoubtedly being the most important component of learning play a role as one of the determining factors of the educational process of higher education institutions, and therefore must comply with the new standards and be innovative. In the short term we should expect a significant increase in the number of organizations involved in the creation and distribution of electronic educational resources, increasing the number of producers and consumers in the Russian ESM market, making it development urgent.

In order to understand the economic substance and nature of the concept of "market of electronic educational resources", we turn to the writings of the classical political economy and examine the notion of "market". In the economic literature there are different market concepts: classical, neoclassical, Keynesian, institutional, Russian neo-institutional, etc. According to the concept of the classical school, market is an exchange organized under the laws of commodity production and circulation. Within this framework, the market is considered from the standpoint of reproduction, since the emphasis is on the phases of the reproductive process. However, it is impossible to identify and exchange market. Market is not just an exchange. The exchange can be performed by non-market means. The market exchange is associated with the public evaluation of goods and services. However, there was also a simplified view. For example, E. J. Dolan and D. Lindsey refer market to any interaction in which people come to trade with each other [5].

Within the neoclassical concept, market is defined as a set of economic conditions in which buyers and sellers interact to implement mutually beneficial trade deals. These conditions are supply and demand. For example, JC Luft defines the market as a special place to practice your trade or as a general name

for a group of consumers, united by geography or needs, generating demand [6] . Within the neoclassical concept, the market is interpreted as the interaction of supply and demand.

Keynesians believe that the market is one of the most amazing public institutions created a history of human society, and have two advantages: it is dynamic, and is self-regulating.

Institutional direction of economics determines market as an institution that brings together buyers and sellers of certain goods and services. Economists of this school believe that sharing is the important but not the only form of communication enterprises and households. Institutionalists focus on the study of organizational forms, coordinating market relations.

Russian economy school has made a significant contribution to the development of market theory: a synthesis of the achievements of classical , neoclassical and institutional schools in the form of the concept of " threefold market", to distinguish between different levels of abstraction and concrete manifestation of the essence of the market. The market is seen as an economic category, as a mechanism of management and as an institution. Abstract level is a characteristic of the market as a system of relations (with the concept of the classical school). Specific level is an analysis of the market as a special management mechanism (corresponding to the position of the neoclassical school). Relational level is the level of the organization - the institution (corresponds to the institutional approach) [7].

Modern economists believe that the market - a set of economic relations that characterize the relationship between sellers and buyers about the sale of goods and services, and determining the dominant form of communication producers on the basis of the social division of labor. Other economists argue that the market is a set of relationships between buyers and sellers, producers and consumers about the implementation of the goods and the needs, or market is a set of symmetric electoral exchanges, in which the proportions are regulated by price mechanism [8].

To summarize all mentioned above, we determine that the market for e-learning resources is a set of economic relations existing between the market in the process of production, distribution, exchange and consumption of electronic educational resources.

The development of the market of electronic educational resources is related to the improvement of economic relations between its participants - economic entities, which include education authorities, educational institutions - service providers, end users, manufacturers of technology, manufacturers of electronic educational resources, research organizations, etc. Socio-economic interaction between the market of electronic educational resources are mediated by a mechanism of market power, which is defined as the ability of one of the subjects of the market have an impact on other subjects, and to dictate terms regarding the prices, production volumes of services, consumption, etc. Such market power relative to the market of electronic educational resources have resource providers who are interested in developing the market of electronic educational resources and be forced to do the unification of the technologies of e-learning and standardization of approaches to the management of services in this area, that in the period of active production of electronic information services industry not be out of the backbones of the market.

The practical aspect of the functioning of Russian market of electronic educational resources in the study of one of its major segments - electronic educational resources at the universities in Russia, such as Volga State University of Technology.

It is obvious that the introduction of e-learning resources in the learning process improves the competitiveness of the university. Modern school must have a network of training centers and telecommunications. It requires the use of information and communication technology (ICT) not only to educate students but also in the management of all aspects of the university. Education with the support of ICT, being an important factor of modernization, involves a number of difficulties that hinder its use. For example, the high cost of training tools, the latest technology. The important role is played by the level of computer training to teachers and students. [9]

For a more complete understanding of the influence of external and internal factors affecting the development of the university, using electronic educational resources, it is necessary to apply the SWOT-

analysis, method of research strengths and weaknesses of the organization, as well as the opportunities and threats to it from the external environment.

Table 2 identifies the main environmental factors affecting the use of electronic educational resources in higher education.

Table 2

Environmental factors affecting the use of electronic educational resources in higher education

<i>Factor</i>	<i>Display</i>	<i>Possible reactions of the university</i>
<i>Political factors</i>		
<i>Russia's participation in the Bologna process</i>	<i>The reform of the education system, the emergence of new standards</i>	<i>The adaptation to the new conditions</i>
<i>The interest of the state</i>	<i>Necessary support from the government</i>	<i>The possibility of the ESM through funding grants</i>
<i>Economic factors</i>		
<i>The average inflation rate in Russia:</i> 2009г. – 8,1% 2010г. – 8,8% 2011г. – 6,1% 2012 г. -6,4 %	<i>The volatility of prices for equipment and educational services</i>	<i>Saving resources, raising the cost of educational services</i>
<i>Realincomegrowth:</i> 2009г. – 3,1% 2010г. – 5,1% 2011г. – 0,8% 2012 г. – 4,2%	<i>The increase in effective demand</i>	<i>The expansion of the education market, the ability to provide more educational services</i>
<i>Legal factors</i>		
<i>The new requirements of the Federal State Educational Standards of the third generation</i>	<i>Changing requirements for the structure and terms of implementation and results of the basic educational program</i>	<i>Increase availability of VSUT students with access to electronic educational resources to meet the requirements</i>
<i>Socialfactors</i>		
<i>Improvementoflivingstandards</i>	<i>The possibility of increasing the volume of e-education</i>	<i>The increase of e-education, accelerating asset turnover</i>
<i>The stratification of society, big difference between the income of different social groups</i>	<i>Legal instability, the existence of unemployment, inability to obtain high returns most of the population</i>	<i>Focusing on a specific range of consumers, accessibility for users with different levels of income</i>

<i>Technological factors</i>		
<i>Active implementation of innovative technologies</i>	<i>Improvement of the quality of education through the use of the latest developments and technologies</i>	<i>The development of material and technical base of the university</i>
<i>The development of scientific and technical progress in the field of educational services</i>	<i>Improving the competitiveness of universities</i>	<i>Wide opportunities to develop a customizable electronic resources with a view to their sales in the education market</i>

The most important environmental factors are social and technological, as they determine the prospect of implementing an effective e-learning educational resources. The important roles played by economic factors (as they affect the pricing policy of the university and the demand of the population) and the legal factor, in accordance with which it is necessary to bring the activities of the university in compliance with the new educational standards.

Background information for the SWOT-analysis of electronic educational resources at the university is presented in Table 3.

Table 3

Background information for the SWOT-analysis of electronic educational resources at the university

<i>Strengths</i>	<i>Weaknesses</i>	
<ol style="list-style-type: none"> 1. <i>At the moment, VSUT already has the experience developing their own ESM advanced electronic library system;</i> 2. <i>Established cooperation with suppliers and developers of the ESM, subscribe to updates;</i> 3. <i>Strong material and technical base of the university, equipping classrooms, a corporate network;</i> 4. <i>Skilled professionals and developers, experienced teachers;</i> 5. <i>Structured system of management of electronic resources, the rational allocation of responsibilities among staff;</i> 6. <i>A sufficient level of computer skills of most students.</i> 	<ol style="list-style-type: none"> 1. 2. 3. 4. 	<p><i>High cost of training facilities and the latest technology;</i></p> <p><i>Insufficient level of computer training of teachers of the university (non-technical);</i></p> <p><i>Lack of awareness of the possible forms of e-learning;</i></p> <p><i>A limited amount of funds for the timely update of material-technical base.</i></p>
<i>Opportunities</i>	<i>Threats</i>	
<ol style="list-style-type: none"> 1. <i>The possibility of development of e-education through state funding, obtaining</i> 	<ol style="list-style-type: none"> 1. 2. 3. 	<p><i>The rapid obsolescence of technology and equipment;</i></p> <p><i>Volatility of modern technology;</i></p> <p><i>Stricter legislation in the field of higher education;</i></p>

<p>2. grants; The expansion of the education market by increasing demand of the population;</p> <p>3. Wide opportunities to develop a customizable electronic resources with a view to their subsequent sale on the market of educational services through the rapid development of scientific and technical progress in the field of HPE</p>	<p>4. new technology teachers and students.</p> <p>5. Difficulties with developing Additional load on the faculty and staff of the university.</p>
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The table examined the strengths and weaknesses of the use of e-learning resources in higher education, and the opportunities and threats posed by the external environment on the basis of the analysis of factors listed above. To establish the relationships between the strong and weak sides of the organization, as well as threats and opportunities, we composed the SWOT-analysis matrix based on which the further development of strategies for using e-learning resources in higher education will be. This matrix includes four fields of intersection of characteristics of the internal environment and external environment changes, and is presented in Table 4.

Table 4

SWOT-analysis matrix of the e-learning use at the university

<p style="text-align: center;">Ambient changes</p> <p>Internal environment characteristics</p>	<p style="text-align: center;">Opportunities:</p> <ol style="list-style-type: none"> The possibility of development of e-education through state funding, obtaining grants; The expansion of the education market by increasing demand of the population; Wide opportunities to develop a customizable electronic resources with a view to their subsequent sale on the market of educational services through the rapid development of scientific and technical progress 	<p style="text-align: center;">Threats:</p> <ol style="list-style-type: none"> The rapid obsolescence of technology and equipment; Difficulties with developing new technology teachers and students; Additional load on the faculty and staff of the university.
	<p style="text-align: center;">Strengths:</p> <ol style="list-style-type: none"> Strong material and technical base of the university, equipping classrooms, a corporate network; Skilled professionals and developers, experienced teachers; A sufficient level of computer skills of most 	<p style="text-align: center;">SO field</p> <ol style="list-style-type: none"> Improvement of material and technical base through grants; The rapid development of teaching skills to work with the ESM;

<i>students.</i>	<i>3. Development of own competitive ESM and enter the market as a producer.</i>	<i>unloading teaching hours.</i>
<i>Weaknesses:</i>	<i>WO field</i>	<i>WT field</i>
<ol style="list-style-type: none"> 1. <i>High cost of training facilities and the latest technology;</i> 2. <i>Insufficient level of computer training of teachers of the university (non-technical);</i> 3. <i>Lack of awareness of the possible forms of e-learning.</i> 	<ol style="list-style-type: none"> 1. <i>The acquisition of technology through state aid and grants;</i> 2. <i>The strategy of strengthening competitive positions in the market of ESM.</i> 	<ol style="list-style-type: none"> 1. <i>Rational use of available resources and equipment;</i> 2. <i>Carrying out activities aimed at familiarizing with the ESM.</i>

The results of the analysis show that for the effective use of electronic educational resources, VSUT needs to develop strategies for further promotion of e-education in the market of higher education.

On the basis of the SWOT-analysis of electronic educational resources in the educational process, VSUT can develop a strategy to promote the services of e-learning in the market.

The purpose of the strategy is to position VSUT in the education market as an innovative institution, introducing advanced information and communication technologies in the educational process. To achieve this purpose, a set of measures was formed:

1. *It is necessary to carry out the maintenance of existing systems using the ESM and its periodic upgrades, including software updates and periodic training of personnel. There is a task to create a database of external sources (electronic library systems , educational portals , etc.) with the ability to search for resources by topic areas.*
2. *It is necessary to strengthen the material and technical base of the university through funding and grants.*
3. *Organize systematic training activities for teachers and employees of the university with use of ESM , which will further allow them to increase the level of training students of different specialties.*
4. *To develop distance technologies and continue to use them in the learning process , which will allow not only to help the teachers, but also to bring to lifelong learning by enabling remote monitoring and assessment of students for their academic performance.*
5. *To organize the development and promotion of competitive software products on the market of ESM, contracts for the supply of technical development with universities in Russia, thematic webinars.*

By implementing the strategy developed, the institution would declare itself not only as a university that provides quality educational services using the latest technology, but also as a full-fledged developer of electronic educational resources used in their own learning process and delivered to other educational institutions on a contractual basis, that will strengthen the competitive position of Volga State University of Technology.

Conclusions. During the study it is determined that e-learning resource is an educational content, invested in electronic form and played by local and network technology through a variety of media. The market of electronic educational resources is a set of economic relations existing between the market in the process of production, distribution, exchange and consumption of electronic educational resources.

The development of the market of electronic educational resources is related to the improvement of economic relations between its participants - economic entities, which include education authorities,

educational institutions - service providers, end users, manufacturers of technology, manufacturers of electronic educational resources, research organizations, etc. Socio-economic interaction between the market of electronic educational resources are mediated by a mechanism of market power, which is defined as the ability of one of the subjects of the market have an impact on other subjects, and to dictate terms regarding the prices, production volumes of services, consumption, etc. Such market power relative to the market of electronic educational resources have resource providers who are interested in developing the market of electronic educational resources and be forced to do the unification of the technologies of e-learning and standardization of approaches to the management of services in this area, that in the period of active production of electronic information services industry not be out of the backbones of the market.

On the basis of the SWOT-analysis of electronic educational resources in the educational process of VSUT a strategy for promotion of e-education institutions in the Russian market of higher education is proposed.

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