SOME ASPECTS OF CREATING 3D ELECTRONIC INFORMATION EDUCATIONAL RESOURCES IN MODERN EDUCATIONAL CONDITIONS

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Abstract. There are a huge number of file formats that describe 3D objects and scenes. But most of them were created by individual firms and developers. Each of them had specific limitations and was used to solve problems in rather narrow areas. Therefore, there was a constant urgent need to transfer files from one format to another in order to use previously obtained models for new tasks. This article analyzes the traditional and non-traditional ways of creating electronic learning resources.
Key words: information technologies, modern methods, competence, efficiency.

In the simplest case, the Internet infrastructure acts as a means of delivering information to a potential client and obtaining information about his intentions. In a more advanced version, the Internet is also used as an information exchange medium between departments of the store and suppliers.

The information core of the electronic store is the catalog of goods and the form of its presentation on the information server. Creating a well-structured catalog of goods with a well-thought-out classification requires the work of professional merchandisers. No less important work that needs to be done is the formation of electronic images and product descriptions. A clear description of the consumer properties of the product with a thoughtful presentation of its appearance can become the determining criterion for choosing a buyer [38].

When developing an information server, it is important to take into account the perceptions of the target audience about the classification of goods. For example, in bookstores there is a fairly well-established classification of sections. Apparently, most users expect to see the usual search guidelines in the electronic store. The content of the information server is not limited to the goods classifier. There is an obvious need for a developed search service and, possibly, specialized advisers or a system of automatically generated links to products that have previously interested other buyers of this product.

The design of the e-shop deserves special attention. The form of presentation of the material, ease of navigation and basic actions for choosing a product, taking into account various features of the equipment (for example, monitor resolution and the selected color rendering mode) have an important impact on a potential buyer. The basis for building the interface of electronic stores is unchanged - this is functionality. The designer must, while maintaining functionality, give the store an original and attractive appearance.

Information Services. One of the most significant advantages of e-commerce is the reduction in the number of intermediaries in the chain from the producer to the consumer of goods and services. The new economy, contributing to the displacement of traditional intermediary companies, at the same time stimulates the emergence and rapid development of intermediaries involved in the collection and distribution of information in the e-commerce market [59].
Search portals are the most well-known new types of organizations - economic intermediaries. Portal search engines provide Internet visitors with an easy and efficient way to find servers that contain the information they need about goods and services. Organizations that own trade information servers are interested in the presence of search mechanisms. The reason for this is the avalanche expansion of the range of electronic stores, as a result of which it becomes increasingly difficult for sellers to promote their brands and find buyers. Today there is an active formation of the market for services provided by information intermediaries in the B2C segment.
The economic feasibility of the existence of information intermediaries is based on the need for their services on the part of sellers of electronic stores and end buyers.
e-health. In general, the e-health market in the Russian segment of the Internet is currently rather poorly developed. The most developed category is represented by information intermediaries oriented towards end users or specialists. Commercial organizations operating in the healthcare sector use the Internet infrastructure mainly to provide information about the availability of goods and services to end users or potential partners [50].
Many clinics already have their own representations on the Internet. As a rule, the main emphasis is placed on the addresses of clinics and information on the list of services provided by them and on the corresponding prices. In some cases, clients are given the opportunity to receive not only information, but also some additional services in the mode of interaction with the information server (free consultations, making an appointment).
Remote education. The distance form of education is understood as such a form in which education takes place through the self-study of educational material by the student using the possibilities of computer technology, including Internet technologies, in the educational process. The remote form is a modern extension of the well-known correspondence form, but with more possibilities [6].
Distance education has a number of distinctive features:
interactivity of the educational, cognitive and information environment created during distance learning based on the telecommunications environment used;
personality-oriented education, it is possible to use individual curricula;
social equality, ie. the opportunity for any person to study at any educational institution with any teacher, regardless of his place of residence and the location of the educational institution;
cost-effectiveness (by reducing the cost of training space, transport, technical facilities);
Flexibility in time, pace and volume of training.

Customer relationship management. There are three groups of business applications designed to automate the process of interaction with customers: o sales management; o marketing;
o customer service and customer call center.
Sales management includes managing customer accounts, managing product and service lists, and managing customer contacts.
The customer relationship management strategy is aimed at shifting the company's performance indicators from internal business processes to indicators that assess the degree of customer satisfaction.
An important method for improving customer relationship management systems is to enable them to control their purchasing power. Some companies allow buyers, after registration, to bargain with the seller of goods. After registering a client on the information server of such a company, he receives a list of suppliers of goods with prices. The buyer proposes his own price proposal (either in real time or by email), on the basis of which the sellers can decide to sell.
Methods for increasing competitiveness.
Any electronic trading or service company competes with two groups of organizations: with companies operating in the information space, and with traditional companies selling the same type of goods or services. For a successful business, any market participant has to provide an advantage in two directions at once, and only success in both directions of competition creates the necessary conditions for establishing strong and long-term relationships with customers [34].
One of the most obvious ways to achieve competitive advantage is to lower the price of a product or service compared to competing traditional companies. In this case, ceteris paribus, for the client - both legal and natural person - there is a very specific added value in the form of money saved. A lower level of the chain of companies operating on the Internet can be established and maintained due to savings on the lease of retail and warehouse premises, payment for the work of the organization's personnel, automated processing of payment transactions.
In some cases, for example on electronic exchanges, lower prices are due to a decrease in the number of participants or the absence of intermediaries. Real practice shows that setting lower prices by an organization that has entered into e-business has only a short-term effect: its pricing policy is immediately copied by competitors operating in the same e-business sector. In addition, understating the price is dangerous for any company as a potential source of unjustified financial losses and rapid bankruptcy.
A more preferable way to increase competitiveness is to improve the added value of the offered product or service. Most often, this is expressed in maintaining a higher level of service and providing greater convenience for customers. E-commerce initially creates certain advantages over the technologies of traditional companies: the information infrastructure is often the medium for delivering some type of goods (software, audio recordings, texts of

correspondence consultations) directly to the place of their consumption. The problems inherent in it are the insecurity of making payment transactions and the presence of distrust of a certain part of Russian consumers in technologies for paying for purchases online [53].
The experience of the most successful virtual companies shows that in order to form a stable contingent of consumers, it is necessary to constantly search for and implement new methods for increasing the added value of goods and services, as well as the formation of the optimal price for them.
The main policy of forming a stable contingent of customers is based on the study of consumer preferences and the provision of individualized services. A relatively small group of customers loyal to the company serves as a guarantee of the stability of the organization's activities. According to the British economist Peter Doyle, if in the first year a loyal consumer brings a company a profit of one thousand pounds sterling, then in ten years this amount increases 50 times [70].
Increasing competition has meant that acquiring each new customer is significantly more expensive than maintaining a partnership with an existing customer. For example, in the field of retail banking, 2-3 times more money is spent on obtaining a new client than on maintaining the loyalty of an existing one; in retail trade this indicator increases up to 3-4 times, in the market of business tourism and entertainment - up to 4-5 times. The sources of additional costs are conducting marketing research and processing its results, conducting advertising campaigns, negotiating with potential customers.
Under these conditions, it becomes relevant to improve the representation of the organization on the Internet, including by improving its appearance and ways of presenting information. The use of three-dimensional graphics brings this process to a qualitatively new level, allowing economic entities to obtain unique competitive advantages in the virtual space [38]. Overview of 3D technologies.
By nature, a person perceives the world in 3 dimensions, and the task of reproducing the familiar feeling of space in the area of software interfaces has been standing since the advent of the computer. Attempts to reproduce the three-dimensional world were primarily made in games, the appearance of 3D in the cinema caused a great resonance. Today there are a large number of various software 3D editors, each of which solves its own problems.
With the advent of the Internet, attempts to make it three-dimensional are made quite regularly, especially in recent times.
Many companies are working hard to improve visualization tools and 3D interactive graphics applications for financial and other data. Toronto-based Visible Decisions develops client software based on these technologies for the banking and oil and gas industries. The company's current product, Discovery, is an integrated package and toolkit for creating standalone visual applications. VDI and Arbor Software recently joined forces to develop a multidimensional database visualization interface.

There are recent developments aimed at facilitating the creation of three-dimensional images. One of the directions of these developments is an attempt to create three-dimensional models from two-dimensional images. Among others, Susoge and Immersion offer systems that typically use video cameras to capture multiple views of an object and special software that converts these views into 3D objects.

There are already a number of systems on the Internet that provide the ability to view three-dimensional objects on a web page, the most widely known technologies are VRML, Metastream (Viewpoint) and Cult3D.

Despite this, there is currently no Internet market for 3D graphics. None of the developers today does not receive any serious profits, all research is carried out at the expense of investments. To verify this, just look at the financial reports of Viewpoint or Susoge - this is public information published on company websites.

The simplest and most affordable way to simulate three-dimensionality is the animated graphic data interchange format (GIF), when several dozen graphic images of an object from different sides are combined into one GIF file. In this case, the sequence, speed, background of their display and some other parameters are set [33]. There are many programs that can create such GIFs, they are developed by a variety of manufacturers.

Significant disadvantages for the practical application of animated GIF'a in serious areas, such as e-commerce, are a considerable file size and a complete lack of interactivity, i.e., the ability to control the viewing process.

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