ISSN: 2350-0328

International Journal of Advanced Research in Science, Engineering and Technology

Vol. 7, Issue 12 , December 2020

Conceptual Andgraph Model of Projecting of Trading Electronic System

S.S. BEKNAZAROVA, M.K. JAUMITBAEVA , G.M. JUMATOVA

Professor of Tashkent university of information technologies named after Muhammad al-Khwarizmi, Doctor of technical science, associate of professor
Teacher of specialized branch of Tashkent state law University, Tashkent, Uzbekistan
Assistant of Tashkent state University of Economics

ABSTRACT: The article describes the process of designing an electronic trading platform, where the conceptual and graph models are presented in the form of a diagram reflecting the relationship between entities and precedents and being an integral part of the precedent model, which allows to describe the system at a conceptual level. In this article discusses the features and trends of process of development and creation of a multi-functional electronic trading platform is aimed at efficient and profitable interaction of suppliers and buyers. Interaction takes place through electronic communication systems, so it is always operative and relevant. Electronic trading platform is a complex of information and modern technical solutions. There are several types of electronic trading platforms - for commercial customers, for placing government orders. The sites on which electronic transactions are performed by commercial customers are divided into specialized and multi-profile. Users, participants of the sites, held auctions and trades themselves can decide on which of the sites it is more convenient and profitable to work with. In addition, on a multiprofile resource the customer can act as a supplier, the seller - this is dependent on the scope of his activities, on the possibilities.

KEYWORDS: conceptual model, processes, entities, precedent, electronic trading platform, multi-functional electronic trading platform, information flow, data flow, information flow objects, users, customers, suppliers.

I.INTRODUCTION

Competition, as you know, is a powerful incentive and decisive factor in the development of an innovative economy, innovative entrepreneurship and the “main factor susceptibility of an enterprise to technical innovations,” it stimulates production, etc. The incentive to attract foreign investment in developing countries is trade promotion. Ever since the Great Silk Road and long before it, goods found their markets and their customers, new sales markets were mastered, new countries with their rich culture, traditions, way of life, social and economic system. A good quality product is always attractive to the consumer. Over time, development has reached such a level that now you can purchase goods without leaving your place. Fantastic. Technologies of the 21st century are amazing and surprising. And in our country, electronic commerce is developing, websites and online trading platforms are being created. The ICT sector has become one of the most promising and self-sufficient, both in our country and in the world[1, p.12-16].

II. PROPOSED METHODOLOGY

The growth in world trade, according to preliminary estimates by experts of the currency fund, increased in 2017 by 4.2% compared to 2.4% a year earlier.

At the same time today, we need to improve our success and gain a foothold in the market of IT-technology. The national electronic trading platform will allow creating a single information and trading space for all its participants with the necessary integration of international payment systems.

This will maximally simplify the search for consumers for manufactured goods, both for the local consumer and for the international one, which causes transparency and accessibility in the choice of products and goods. The use of advanced information technologies, the presentation of national producers will effectively demonstrate and attract potential buyers of domestic products.

ISSN: 2350-0328

International Journal of Advanced Research in Science, Engineering and Technology

Vol. 7, Issue 12 , December 2020

Today, e-commerce is developing exponentially in emerging economies. According to expert data http://profi-site.info/e-commerce.html., The turnover of the e-commerce market in 2015 in the world is 1.8 trillion US dollars.

There were also articles with forecasts for 2017, it will be 2.4 trillion US dollars. The subject of e-commerce appears at all international events and venues, such as ASEAN (Association of Southeast Asian Nations), APEC Forum (Asia-Pacific Economic Cooperation), WTO (World Trade Organization) G20, OECD, BRICS, etc.

The growth of world trade according to preliminary estimates by experts of the monetary fund, the volume of trade in the world showed a growth rate in 2017 by 4.2% compared to 2015 from 2.4%.In developed countries in the field of online sales (retail), for several years in a row, the People's Republic of China has been the leader with total revenue for 2017 totaled $ 600 billion. After China, the next country is the United States with an income of 475 billion dollars, Japan is in third place with 105 billion dollars, followed by Great Britain 103 billion dollars, and Germany closes in the fourth place with a sum of 57 billion dollars. Despite the undeniable advantages of the emerging e-commerce markets, the turnover of retail e-commerce is increasing in Asia. According to the forecasts of the European analytical service Statista, "the average annual growth of B2C turnover in the future will be among the leaders (23.7%), slightly ahead of India (23%) and Indonesia (20.7%), the Philippines (18.3%) and China (17.4%). " The most active online audiences are residents of the countries of China and South Korea, where, as a percentage, the share of the population actively purchasing goods and services through online purchases is 83%, only 1 percent more than the UK, then Germany 81%, Indonesia 79%, India and the US each with 77% [2, p.45-56].

A large selection of payment systems divides users according to their preferences, for example, payments made by VISA MASTERCARD credit cards (42%), payment systems mainly PayPal (39%), debit cards (28%), payment on delivery (23%), bank transfers (20 %), promotional codes and gift cards (15%), payment from a mobile account (14%), cryptocurrency (3%). Every day, PayPal is increasingly capturing the market, for example, in 2012, 111.7 million people used, and in 2017 their number exceeded 218 million.

In Armenia, the Ministry of Finance pays special attention to the introduction of online payments and online commerce. The Ministry of Finance has introduced a mechanism for customs accounting of international postal and courier items to simplify the procedure for issuing postal items. The pursued goal is the implementation of door-to-door delivery. Based on the protocol on the organization of the preliminary exchange of information on goods transported between the Republic of Armenia and the Russian Federation, work is underway to introduce an information system for the preliminary exchange of information [3, p.56-68].

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

Scheme 1. List of categories of conceptual classes

Transactions Recommendations: these classes are especially critical because they often describe financial transactions, so the process of separating conceptual classes should begin with them	• customer (buyer), product (product), zakaz (order), oplata (payment)
Elements of transactions Recommendations: Transactions often consist of elements	• Zakaz (product) Product (goods)
Products or services associated with transactions or their elements Recommendations: transactions are performed on certain elements (goods or services)	• Product-korzina; korzina-zakaz
The roles of people or organizations related to transactions. Executors of precedents. Recommendations: you need to know who is involved in the transaction	• Customer (buyer), seller (supplier), admin (administrator).
Place transactions. Important events for which you need to store time and place	• Product; zakaz; oplata, zakaz; oplata
Physical objects Recommendations: such objects usually correspond to software systems designed to control or simulate	• Catalog (catalog), product (Goods), Catalog (catalog), product (Goods)
Description of objects	• Catalog-product (Product catalog) product-characteristika
Catalogs Recommendations: the description is often given in the catalog	• ProductDescription (Product Catalog), FlightDescription (Flight Directory)
Containers of other objects (physical or informational)	• Oplata
Container Content	• Customer; product
Other systems external to this system	• Oplata; web-oplata; bankovskie_kartochki

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

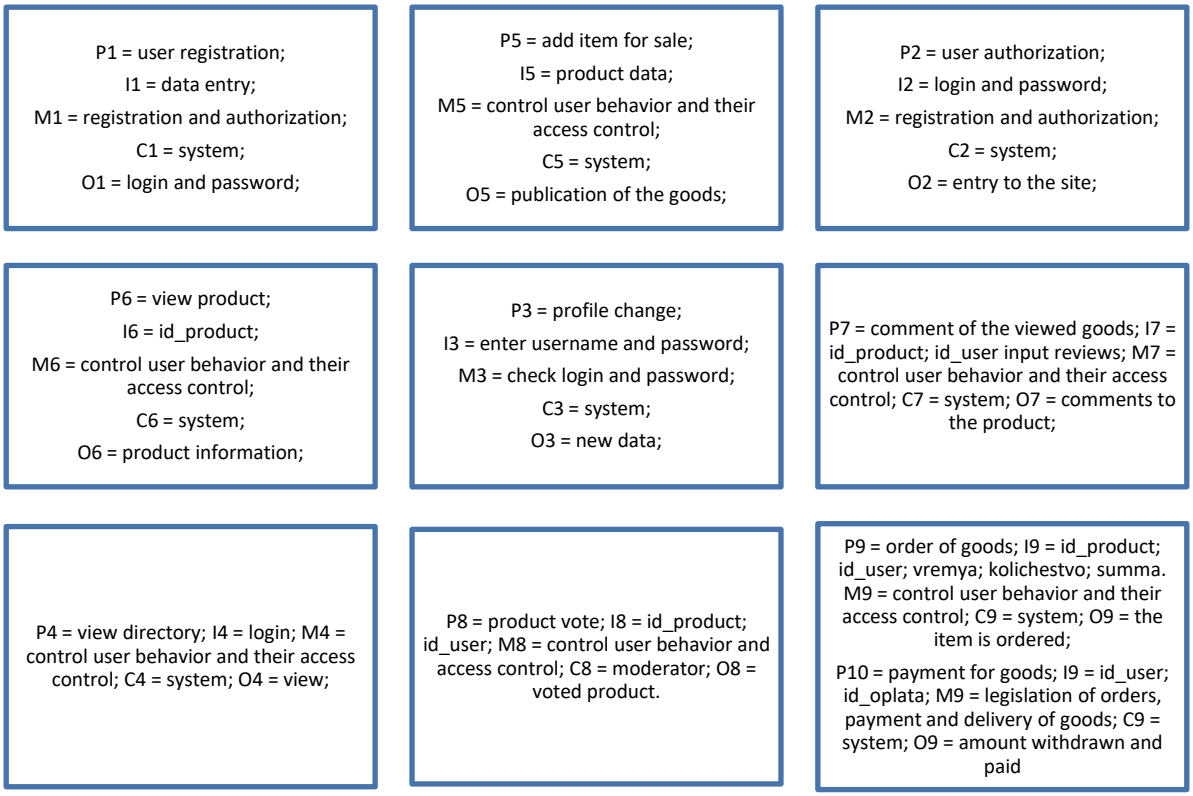


Fig. 2 E-Commerce Class Chart

Figure 2 shows a conceptual model. It highlights 5 main conceptual classes: "Users", "Product", "Zakaz", "Oplata" and "Korzina". These classes, in turn, are divided into several classes, which are shown below in Figure 2. Each class has its own attributes and operations.

The attributes of each of the classes are designed so that they are described as clearly as possible. As can be seen in Figure 2, almost all classes are related to each other.

In the process of developing a term paper will take into account the basic requirements for the functioning of the development of electronic commerce.

The full value and accuracy of the information is also one of the most important requirements for the topic being developed.

The class diagram is the one that allows you to structurally describe the projected topic, to show its main structural blocks, the relationship between them.

The definition of the main functions of the system is an important step in the preparation of project documentation. Functional requirements indicate what the system should do. Functions can be of several types: hidden and obvious. The evidence of a function is determined by the obviousness of the performance of this function by the system from the user's point of view. Scheme 3 shows an example of the function description.

- Scheme 3. Description of the functions of the electronic trading platform

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

Buyer registration on the site
Hidden
Buyer authorization
Hidden
Taking orders (from registered customers)
Hidden
Taking orders (from registered customers)
Obvious
Register a new product
Obvious
Information change (revaluation or change of other attributes)
Obvious
Taking orders (from registered customers)
Obvious
Deletion of information (when writing off or selling the last book)
Hidden
Add product; Remove item
Obvious
Submit Cart
Obvious
Single item pricing
Obvious
Total cost estimate
Obvious
Editing customer comments
Hidden
Product Verification Online
Hidden
Monitoring
Obvious
Accounting for news and advertisements on the site
Obvious
Web payment
Hidden
Receiving balance
Obvious

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

An association is a relationship between classes, reflecting some significant and useful connections between them. An association is indicated by a line drawn between the classes, with which a specific name is associated, starting with a capital letter.

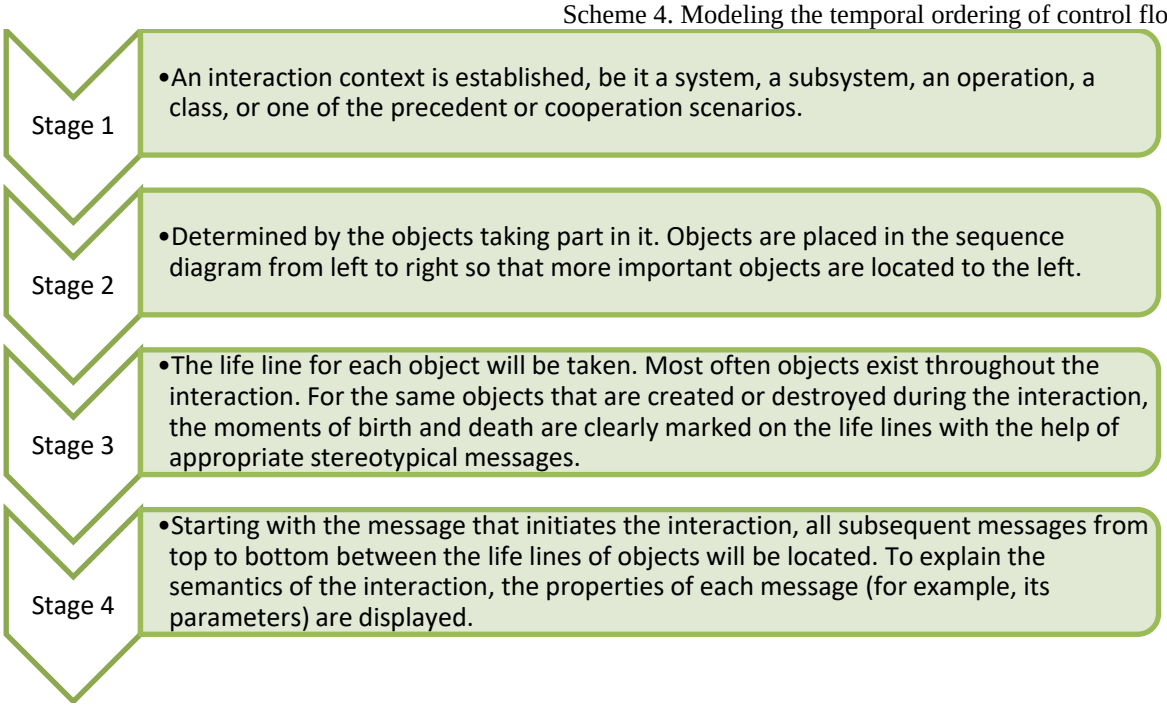
An additional arrow next to the name of the association indicates in which direction to read its name. If there is no such arrow, the names of the associations should be read using generally accepted agreements, namely, from left to right and from top to bottom.

Each end of the association is called a role. The role may additionally have the following characteristics: multiplicity, name and direction of communication, scheme 2.

Functionality and efficiency of the information system is one of the main requirements in the qualification work being developed [4,].

Functionality implies the fulfillment of the main function of developing video lessons, in this case, this requirement refers to accessibility to perception and compliance with the rules for the distribution of topics by content. A domain model is a visual representation of conceptual classes or objects of the real world in terms of the domain. Such models are also called conceptual models.

Scheme 4. Modeling the temporal ordering of control flow



Modeling the temporal ordering of the control flow is as follows, Scheme 4.

The projected electronic trading platform will allow individual modeling of business processes, possessing qualities that ensure its leading position in the market of procurement management systems: self-sustaining information system; flexibility and high speed of adaptation to changes in legislation; cross-platform integration; storing the main body of data and performing key calculations in the "cloud" (IT solution infrastructure); high readiness for operational expansion, development and connection of additional modules; conducting procurement procedures in accordance with the legislation of the Republic of Uzbekistan; automatic posting of information on ongoing procurement procedures on the website of the Chamber of Commerce of Uzbekistan; Intelligent, customizable monitoring, analytics and reporting.

A sequence diagram is one of the interaction diagrams. The sequence diagram illustrates events initiated by the system by artists, Figure 3.

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

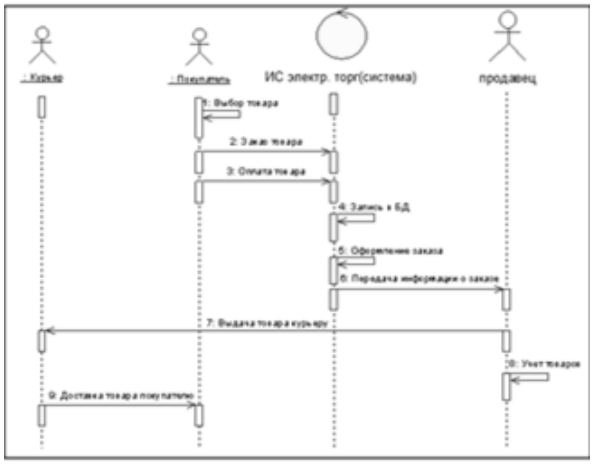


Fig. 3. Online order use case diagram.

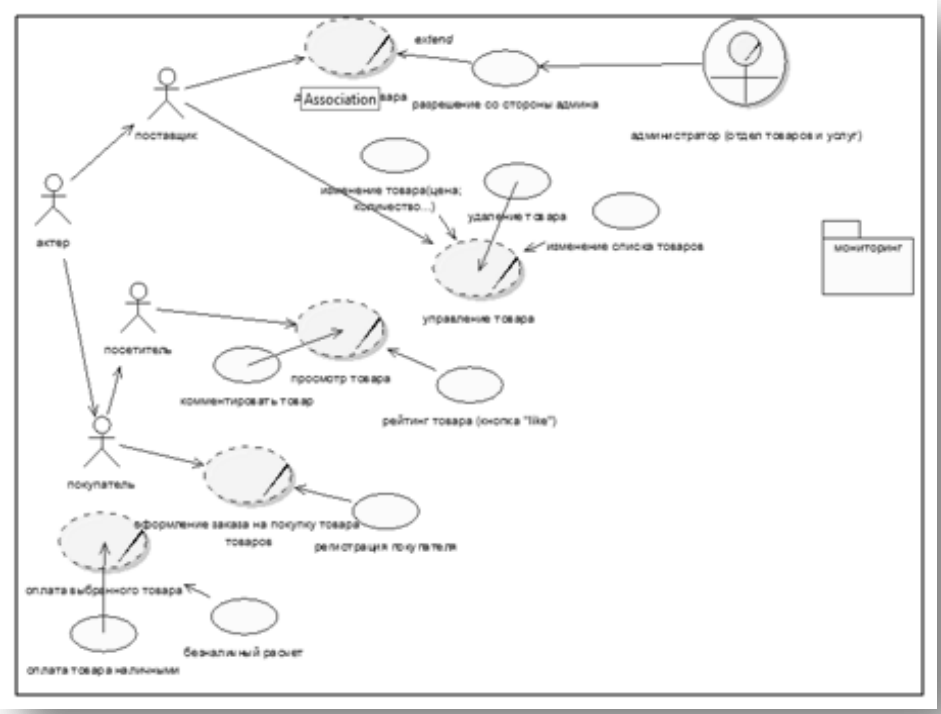


Fig. 4. Graph model of use cases

Thus, this article defines the processes, describes the cases, shows the diagrams of cases, describes the typical course of events, describes the conceptual model, describes the functions of the system, shows the sequence diagram and interaction of actors with the system.

The graph model is presented in the form of a diagram reflecting the relationship between entities and precedents and being an integral part of the use case model, which allows describing the system at a conceptual level. A precedent is the possibility of a simulated system (part of its functionality), thanks to which the user can get a specific, measurable and desired result [5, p.79-94]. The precedent corresponds to a separate service system, determines one of the options for its use and describes a typical way of user interaction with the system. Use cases are typically used to

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

specify external system requirements.

The main use case for this area is the addition of a product. This process involves both suppliers (the client) and the administrator. The main goal of the process is to add goods from suppliers. To achieve the goal, it is necessary to choose from the list of available catalogs of interest, to further form the product [2]. This process is managed by the IP administrators, that is, verifies the product data and suppliers, and then this product is published in the e-commerce IP. This use case is described in Scheme 5.

Scheme 5. Description of use case "add product"

Precedent Name
Add product
Performers:
Supplier (client) and Administrator
Purpose:
Adding product from suppliers for product publication.
The main successful scenario:
Type of:
Ideal
Function:
Add_product

Supplier add product to the desired catalog and this product is checked by the administrator and then published

Next, a graph model of the process of adding a product is presented, Figure 5.

Fig. 5. The process of adding goods

Scheme 6 describes the use of the online ordering entity. Another major use case for the area in question is ordering — online. The buyer participates in this process. The main goal of the process is online ordering by customers. To achieve the goal, it is necessary to choose from the list of available catalogs of interest, then form the product. This process is driven by buyers.

A typical course of events - provides a visual representation of communication with the system, this process is described in scheme 7. Before starting the simulation, the developer should decide on two important things:

First, it is necessary to fix the goal of the process modeling, that is, to answer questions about what the model should reflect. As a rule, the goals of modeling can be the creation of a new activity within the organization or the

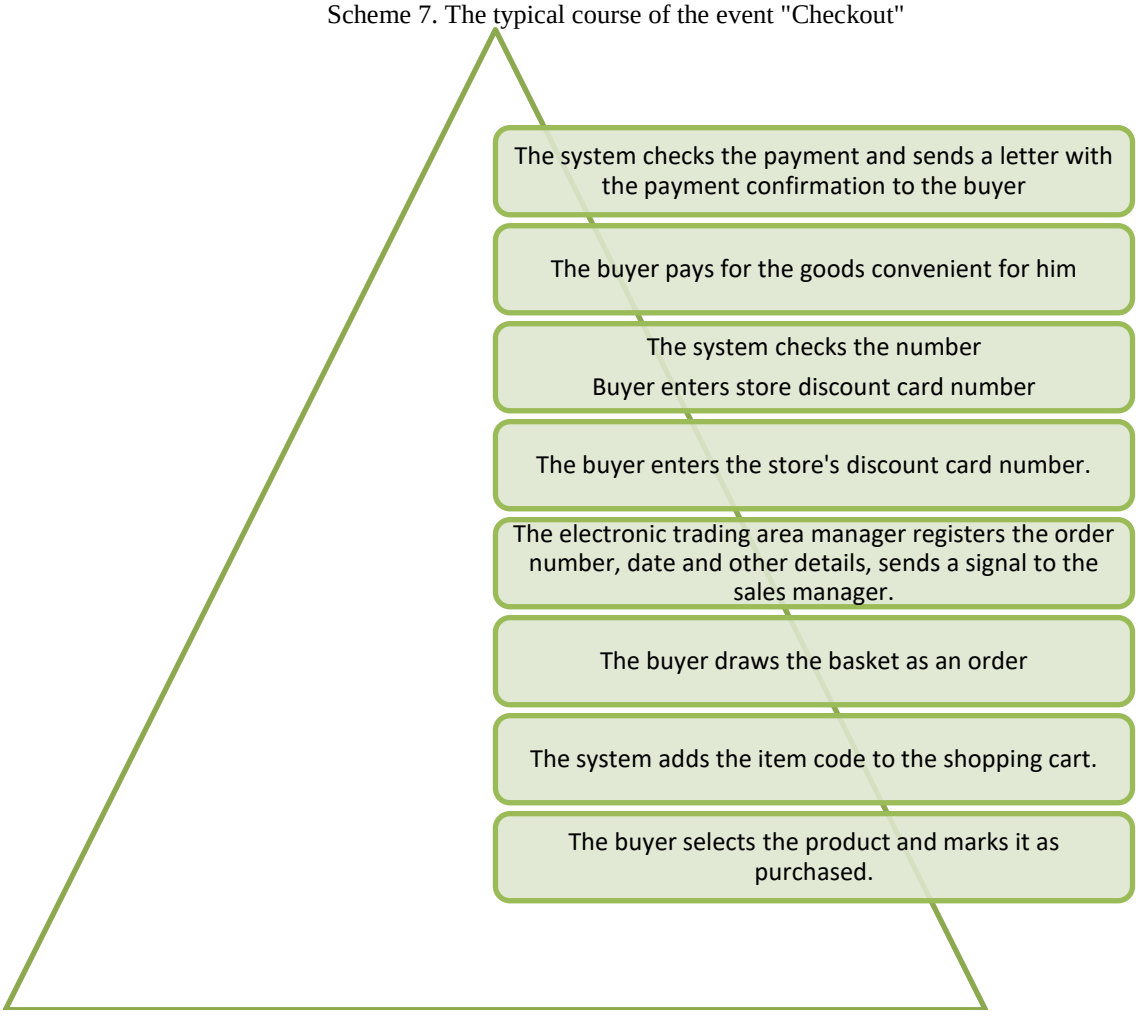
ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

improvement of an existing process [3].

Secondly, to determine and fix the point of view on the model, that is, to determine in the organizational structure of the enterprise the official for whom the model is created. Obviously, the look at the same process from the point of view of the chief technologist and financier will be completely different. One sees only the financial component and some technological details, the second will definitely focus on the technology, almost without reflecting the financial component of the process, such as financial documents, financial resources and so on.

Typically, a typical course of events is described using a scheme, where the actions of external performers are given in the first column, and the response of the system to the performers in the second column.

Scheme 7. The typical course of the event "Checkout"



The projected electronic trading platform will allow individual modeling of business processes, possessing qualities that ensure its leading position in the market of procurement management systems: self-sustaining information system; flexibility and high speed of adaptation to changes in legislation; cross-platform integration; storing the main body of data and performing key calculations in the "cloud" (IT solution infrastructure); high readiness for operational expansion, development and connection of additional modules; conducting procurement procedures in accordance with the legislation of the Republic of Uzbekistan; automatic posting of information on ongoing procurement procedures on the website of the Chamber of Commerce of Uzbekistan; Intelligent, customizable monitoring, analytics and reporting.

Functions of electronic trading platforms. Electronic marketplaces perform a large number of popular functions. First of all, it is informational. All participants can quickly get acquainted with the latest and relevant

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

information. The site also performs marketing services - it helps suppliers find profitable buyers, and vice versa. In addition, all participants can receive data about the objects of sales or purchases of other subjects. The trading platform conducts an advertising function, because all participants immediately enter into a single advertising space. An analysis of the activities of organizations is carried out, the analysis makes it possible to more profitably find possible business partners, customers. The site protects all transactions, business, document flow.

Scheme 6. Description of use-order-online

Precedent name:
Order online
Performers: Buyer (customer)
Purpose: Order - goods via the Internet in the electronic trading platform.
The main successful scenario: The buyer enters the electronic trading platform and opens the catalog he needs, selects the right product and then places an order.
Type of: Ideal Function: Select_catalog; select_product, add_cart

Electronic trading platform - a hardware-software complex that ensures the interaction of suppliers of goods / services with customers and customers before the conclusion of the transaction. In some cases, trading platforms additionally allow you to monitor the implementation and compliance with obligations from all parties to the transaction.

Features of electronic trading platforms:

- consolidation of supply and demand on one web-resource;
- low transaction costs;
- direct income from the first buyer (sometimes from the organizer of the auction);
- operational aggregation of goods / services in accordance with market trends;
- ease of development of the client base;
- high level of security.

In the first place, this is beneficial, since electronic trading platforms are focused on the organization of passive income with minimal labor costs. The owner of the trading system does not need to rent warehouses, search for suppliers and hire a large staff of specialists; all you need is to buy / develop a web-resource and invest in its promotion.

Moreover, the cost of developing an electronic trading platform is much lower than the implementation of a full-fledged online store. The site is filled with lots, delivery, contract processing and other intricacies of online trading by users of the trading platform, while its owner acts as an intermediary.

The e-commerce market in Uzbekistan is only gaining momentum, which provides opportunities for young projects that do not have huge advertising budgets. In fact, in order for an electronic platform to start making a profit, it is enough to provide it with an intuitively understandable interface and extensive functionality to implement the main tasks of users. As part of the implementation of trading platforms, you can use the PHP platform Yii2, which has a

ISSN: 2350-0328
International Journal of Advanced Research in Science, Engineering and Technology
Vol. 7, Issue 12 , December 2020

flexible building architecture in which the user interface, the data storage logic and the control logic are separate components. Thus, the modification of any elements of the system is carried out with minimal impact on the overall structure of the trading platform, thereby providing savings on those. service. Yii2 also has a built-in integration module with third-party systems, which makes it possible to expand the web-resource with additional tools (for example, telephony, converters, settlement systems, etc.).

REFERENCES

[1]. Nasakin, R. Commercial Runet Today Text. / Nasakin R. // ComputerPress. 2005. - No. 10. - P. 72-76
[2]. Novomlinsky, L.A. Internet Commerce. Part I Text. / LA Novomlinsky. / Networks and communication systems. 1998. - № 8. - P. 116-123.
[3]. New technologies for e-business and security Text. / LK Babenko, VA Bykov, OB Makarevich, OB Spiridonov. 2. ed., Ext. and pererab. - Moscow: Radio and Communication, 2002. - 511 p.
[4]. Newcomer, E. Web Services: XML, WSDL, SOAR and UDDI Text. E. E. Newcomer; trans. with English. St. Petersburg. [and others] .: Peter, 2003. - 256 p.
[5]. Newell, Michael V. Project management for professionals. Guide to the preparation for the certification exam Text. / Michael W. Newell; trans. with English. 3rd ed. - M .; S.-P. : KUDITS-Image, 2006.-416 p.
[6]. Sharma, V. Development of Web-servers for e-commerce. Integrated approach: Textbook. allowance Text. / V. Sharma, R. Sharma; trans. with English. M. [and others]: Williams, 2001. - 397 p.
[7]. Shlyakhtina, S. Internet and e-commerce in figures and facts Text. / S. Shlyakhtina / / Advanced technology. Results and forecasts. 2002.-No.1-C. 37-44.
[8]. Beknazarova S.S. Discrete-continuous processes in TIAV multimedia system, LAP LAMBERT Academic Publishing GmbH & Co. KG, Saarbrucken, Germany, 2015, 57
[9]. N. Sedova, V. Sedov, R. Bazhenov, A. Karavka, S.Beknazarova. Automated Stationary Obstacle Avoidance When Navigating a Marine Craft //2019 International Multi-Conference on Engineering, Computer and Information Sciences, SIBIRCON 2019; Novosibirsk; Russian Federation; 21 October 2019
[10]. Beknazarova S., Mukhamadiyev A.Sh. Jaumitbayeva M.K.Processing color images, brightness and color conversion//International Conference on Information Science and Communications Technologies ICISCT 2019 Applications, Trends and Opportunities. Tashkent 2019N. Sedova, V. Sedov, R. Bazhenov, A. Karavka, S.Beknazarova. Automated Stationary Obstacle Avoidance When Navigating a Marine Craft //2019 International Multi-Conference on Engineering, Computer and Information Sciences, SIBIRCON 2019; Novosibirsk; Russian Federation; 21 October 2019
[11]. Beknazarova S., Mukhamadiyev A.Sh. Jaumitbayeva M.K.Processing color images, brightness and color conversion// International Conference on Information Science and Communications Technologies ICISCT 2019 Applications, Trends and Opportunities. Tashkent 2019.

AUTHOR'S BIOGRAPHY

S.S. Beknazarova

Doctor of technical Sciences, associate Professor, professor of the Department of Audiovisual technologies, faculty of Television technologies, Tashkent University of information technologies named after Muhammad al-Khwarizmi.Author of 189 research papers on audio, video, multimedia resources, and media education technologies.

M.K. Jaumitbaeva

Teacher of specialized branch of Tashkent state law University, Tashkent, Uzbekistan direction of Total subjects, Author of 25 research papers on audio, video, multimedia resources, and media education technologies.

G.M. Jumatova

Assistant of Tashkent state University of Economics, Corporative economics and business analyze Tashkent, Uzbekistan direction of Total subjects, Author of 3 research papers on audio, video, multimedia resources, and media education technologies.