The Different Mathematical Parametres and Different Modeling

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*Abstract—*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—*multi-functional electronic trading platform, information flow, data flow, information flow objects, users, customers, suppliers*.*

Introduction

Both suppliers and customers have significant advantages when working with electronic trading platforms. In particular, those who buy products or services significantly save time searching for a potential supplier, save their money for organizing purchases. Honest conduct of the transaction is observed, as the site administration provides for measures directed against unscrupulous suppliers. Auction in electronic form can have participants who at the time of its holding are in completely different corners of the world.

Customers and suppliers, he can quickly find the most interesting in the range and prices of bidding, does not spend money on the advertising company, sales are conducted openly and transparently. Also, you can sell your products from anywhere in the world and at any time - when a profitable buyer has appeared.

Literature review

Functions of electronic trading platforms. Electronic trading platforms perform a large number of claimed functions. First of all, it's informational. All participants can quickly get acquainted with the latest and up-to-date information. Also, the site performs marketing services - it helps suppliers find profitable buyers, and vice versa. In addition, all participants can receive data about objects of sales or purchases of other entities. Trading platform is an advertising function, because all participants immediately enter into a single advertising space. There is also an analysis of the activities of organizations, the analysis provides an opportunity to find more suitable partners for business, clients. The platform protects all transactions, business, and document circulation.

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

446

Features of electronic trading platforms:

- the combination of demand and supply on a single web-resource;

- low transaction costs;

- direct income from the first buyer (sometimes from the auction organizer);

- operational aggregation of goods/services in accordance with market trends;

- simplicity of working time of the client base;

- high level of safety.

Modern electronic trading platforms, among other things, are accompanied by modules of accounting and electronic signature, which provides legal value to the bidding process.

Types of trading platforms:

1. State and municipal systems for the organization of trade relations between enterprises and state institutions (for example, electronic sites for the sale of assets of insolvent banks or the organization of tender purchases);

2. Corporate - trading platforms of large companies, where they also place tender proposals for finding suppliers or executors;

3. Commercial - systems for the organization of trade relations within one or several industries, and participation in trades can be accepted by both physical and legal persons.

Modern trends in the development of the e-commerce market often stimulate the creation of integrated projects that combine the functions of state and commercial trading platforms.

Why open an electronic trading platform?

First of all, this is advantageous, since electronic trading platforms are oriented to the organization of passive income with minimal effort. The owner of the trading system does not need to rent warehouses, look for suppliers and hire a large staff of specialists, it is enough just 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 realization of a full-fledged online store. The users of the trading platform are engaged in filling the site with lots, delivery, execution of contracts and other fine-tuned online trading, while its owner acts as an intermediary.

The e-commerce market in Uzbekistan is only gaining momentum, which gives broad opportunities to young projects that do not have huge advertising budgets. In fact, to make the electronic platform start to make a profit, it is enough to provide it with an intuitive interface and extensive functionality for implementing the basic tasks of users.

Research methodology

As part of the implementation of trading platforms, you can use the Yii2 PHP-platform, which has a flexible architecture of construction, in which the user interface, data storage logic and control logic are separate components. Thus, the modification of any elements of the system is carried out with minimal influence on the overall structure of the trading platform, thereby providing savings for service. Also, Yii2 has a built-in integration module with third-party systems, which makes it possible to extend the web-resource with additional tools (for example, telephony, converters, calculation systems, etc.).

To provide a convenient interface and high performance for mobile devices on mobile devices, React Logic practices the integration of the system with the Twitter Bootstrap platform. The unique technology has shown itself well in the international market and is now actively used by the largest trading platforms from around the world.

The interface and structure of electronic trading platforms are individually developed for the customer's tasks and preferences. For example, the website of a trading platform can be equipped with special sections of information or functionality that will not only facilitate its promotion in the search networks, but will also is useful to users [3,4].

The code and structure of electronic trading platforms developed by web-studio React Logic, by default provide search optimization on system Google, Yandex, Bing and Yahoo. Thus, in order to occupy a leading position in the search output, it is enough just in time to fill the trading platform with unique texts and purchase the reference mass.

Stages of development of trading platforms

The development of the electronic trading platform Uzsale.uz is planned to be implemented according to the User experience (UX) model, built on the basis of perception and reciprocal interaction of users with the web resource. Unlike traditional design, oriented to the perception of aesthetic qualities, the UX model involves working out the logic of the trading platform in order to stimulate the maximum number of conversions - transactions.

Analyze and results:

1. Strategy design - analysis of desires and expectations regarding the perspectives of web-resource development by owner and user, as well as revealing the image of a potential consumer based on his interests, needs, status, etc.;

2. Projecting capabilities - selection of functionality that will be available to the user, owner and administration of the electronic trading platform;

3. Designing the structure - planning the structure of the web-resource, the location of the pages, functional forms and content (descriptions, contact data, tips, etc.);

4. Designing a prototype - the implementation of the abstract structure of the trading platform, in which case the final position of the components is determined;

5. Designing a design - developing a corporate identity and design of a web-resource, which includes the design of fonts, images, forms, buttons and other elements of the web-resource.

Creation and implementation of an electronic trading platform on the basis of solutions the leading company is a complex of information and technical solutions responsible for the implementation and conduct of procurement procedures in electronic form built on the electronic trade platform architecture. The system allows you to fully consider and implement all the nuances and features of conducting procurement procedures, organizing the training process, attracting potential participants to procurement procedures - this allows you to achieve additional budget savings as a result of the overall increase in the efficiency of procurement activities

Distinctive features. The projected electronic trading platform will be fully compatible with the main common ERP and CRM systems, which will allow individual modeling of business processes, have the highest safety and fault tolerance rating, and will have a number of advantages that ensure its leading position in the procurement management systems market:

- Self-supporting information system;

- Flexibility and high speed of adaptation to changes in legislation;

- Cross-platform integration;

- Storage of the main data array and execution of key calculations in the "cloud" (IT infrastructure);

- High readiness for the rapid expansion, development and connection of additional modules;

- Conducting procurement procedures in accordance with the legislation of the Republic of Uzbekistan;

- Automatic placement of information on ongoing procurement procedures on the website of the Chamber of Commerce of Uzbekistan;

- Intelligent, customizable system of control, analytics and reporting;

- Compliance with standards and certification.

Synthesis algorithm software modules formed task-oriented management system of electronic trading platformsbased on the concept of the formation of individual learning paths multi contents that takes into account the described features and apply the developed models and methods to solve the problem of class formation multi contents for individual training is given in Figure 1.

The modern development of the information society, advancing the information flow of the material is aimed at removing bottlenecks in a multimedia course. Leading information flow in the opposite direction contains, as a rule, the initial information; outpacing the information flow in the forward direction - these are preliminary reports of the upcoming of electronic trading platforms.

Accompanying when simultaneously with the material flow is information about the quantity and quality of material flow allows you to quickly and correctly identify the material values and send them to their destination.

In today's digital world there are many different ways of presenting multimedia information. Of course, in order to convert analog information into digital form, special programs are needed, create a file (it will be called a container), which contains all the text, graphics, audio and video the information.
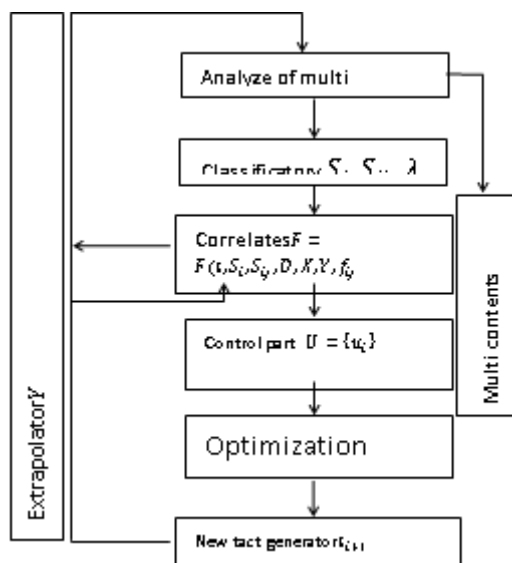

Fig. 1.Algorithm synthesis software modules formed task-oriented management system of electronic trading platforms

The Code abbreviation for Coder / Decoder - program that allows you to convert the recorded information so that it takes up less space. In this case, the file extension can not be changed, ie, the

basic structure of the container does not change, change the representation of text, graphics, audio and video, but to play the file, "encrypted" with any codec, it is necessary for it to be installed on the user's computer [1].A generalized Lagrangian is constructed

$$L = G\big(x(k_F)\big) + \sum_{K\backslash K'\backslash t_F} \Big(\mu(k) - R\big(k, x(k), u(k)\big)\Big)$$

$$+ \sum_{K'} (\mu(k) - G^c\big(z(k)\big) + \int_{T(z)} (\mu^c\big(z(k)\big) - R^c(z(k), t, x^c(t), u^c(t)))dt),$$

And a number of constructions with sufficient optimality conditions of Krotov [2,p.56-71]:

$$G(x) = F(x) + \varphi\big(K, x(K)\big) - \varphi\big(k_I, x(k_I)\big) - \sum_{K_I}^{K-1} \mu(t),$$

$$R(k, x, u) = \varphi\big(k + 1, f(k, x, u,)\big) - \varphi(k, x),$$

$$G^c(z, \gamma^c) = -\varphi\big(k + 1, \theta(z, \gamma^c)\big) + \varphi\big(k, x(k)\big) + \varphi^c(z, t_F, x_F^c) - \varphi^c\big(z, t_I, x^c(t_I)\big) - \int_{T(z)} \mu^c(z, t)dt,$$

$$R^c(z, t, x^c, u^c) = \varphi_{x^c}^{cT} f^c(z, t, x^c, u^c) + \varphi_t^c(z, t, x^c),$$

$$\mu(k) = \begin{cases} \sup\{R(k, x, u): x\epsilon X(k), u\epsilon U(k, x)\}, k\epsilon K\backslash K' \\ -inf\{l^c(z): x\epsilon X(k), u^d\epsilon U^d(k, x)\}, k\epsilon K\backslash K', \end{cases}$$

$$\mu^c(z, t) = sup\{R^c(z, t, x^c, u^c): x^c\epsilon X^c(z, t), u^c\epsilon U^c(z, t, x^c)\},$$

$$l^c(z) = inf\{G^c(z, \gamma^c): (\gamma^c)\epsilon M(z), x^c\epsilon X^c(z, t_F)\}$$

We obtain the following recurrent chain with respect to the Krotov-Bellman functions of two equations

$$\varphi, \varphi^c(z):$$

$$\varphi(k, x) = \sup \varphi\big(k + 1, f(k, x(t)u)\big), u\epsilon U(k, x),$$

$$\varphi(k_F, x) = -F(x), k\epsilon K\backslash K'\backslash k_f,$$

$$\varphi_{t^c}^c = -H_{x^c}^c(z, t, x^c, \varphi_{x^c}^c), \quad (2.4.3)$$

$$H^c(z, t, x^c, p) = max\{p^T f^c(z, t, x^c, u^c): u^c \in U^c(z, t^c, x^c)\},$$

$$\varphi^c\big(z, t_f, x_f^c\big) = \varphi\big(k + 1, \theta(z, t_F, x_F^c)\big), (t_F, x_F^c) \in M_F^c(z),$$

$$\varphi(k, x) = \sup \varphi^c\big(z, \tau^c(z)\xi^c(z)\big), k \in K', u \in U^d(t, x)$$

Substituting these functions into the right-hand sides of the given discrete and continuous relations, $k \in K''$we have

$$x(k + 1) = \theta(k, x(k), \widetilde{u^d}\big(k, x(k)\big)\gamma^c(\check{z})),$$

$$\dot{x}^c = f^c\big(t, x(t)\big), t, x^c, \widetilde{u^c}(\check{z}(k), t, x^c)),$$

$$t_I = \tau(\check{z}(k)), x^c(t_I) = \xi^c(\check{z}), \check{z}(k) = (k, x(k), u^d(k, x(k))).$$

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- Crypto protection and data encryption according to GOST:

- GOST 34.11-94;

- GOST 34.10-2001;

- GOST 28147-89;

- Working with the data center of the highest class Tier-4;

- Dual redundancy of all systems and communication channels;

- Solved problems;

- Excluding the possibility of corruption;

- Direct savings of budgetary funds through procurement activities through open, transparent competitive procedures;

- Centralization and unification of procurement processes;

- Increasing the level of efficiency of the purchasing department;

- Termination of financing of development of duplicating systems;

- Saving on the IT infrastructure.

Functionality of the projected electronic trading platform:

- 465 possible options for conducting procurement procedures;

- Integration with customer information systems including ERP, SRM, CLM, CRM, ECM and Workflow;

- Ready-made integration module with the website of the Chamber of Commerce of Uzbekistan;

- Centralized and delegated process management within a distributed structure with differentiation by roles;

- The technical base of the site is individually modeled for the structure and needs of the organization;

- Integrated "seamless" integration with Banking services;

- Operations with personal accounts;

- Management of payments and primary documentation;

- Agreement and conclusion of contracts in electronic form;

- The possibility of remote work of external experts with applications of participants remotely from the site interface;

- Remote holding of meetings of commissions. Voting using EDS:

- Single provider personal area;

- Working with supplier catalogs;

- Supplier interaction environment;

- Processing of direct orders;

- Conducting double auctions;

- Rating system and compliance-control.

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