

E-BUSINESS AND ITS DEVELOPMENT IN KAZAKHSTAN

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The article is devoted to the issue of e-business development in Kazakhstan. The article provides an analysis and prognosis of electronic business development in Kazakhstan. The implementation of a possible solution to a distributed system is briefly described, based on java-technologies. Brief description of e-business types is given in the main part, also the concept of a distributed system, types of distributed software systems, distributed systems of architecture analysis, logical software layers of distributed systems. The main part of the article reflects the development of a distributed e-business systems example – the online shop on the basis of JAVA-technology, describing the implementation of a distributed system, the software and hardware parts of a distributed system, and also logical architecture for the Internet-shop, and operation of the system.

Keywords: e-business, business process, online shop, technology development of distributed systems, logical architecture, software and hardware, JAVA – technology

In recent years, the world has changed significantly due to the development of information technology. One of the most striking signs of the times became the development of e-business. This segment of business has proved its viability and effectiveness, so virtually any enterprise both production and non-production sphere builds its business processes with the use of e-business elements.

Using of e-business capabilities allows traditional companies to solve marketing and management challenges significantly faster and less expensive. The development and wide distribution of global telecommunication networks was the formation of a fundamentally new type of enterprise, which does not have the traditional tangible expression – digital product presented exclusively in digital form, such as software, e-books, audio and video works and so on [6, 7, 8].

Predictions made by Askar Zhumagaliyev in 2011 are used as a basis for any settlement in the area of e-commerce growth prospects in Kazakhstan. According to him, in 2014 the market will grow to 1,2 billion US dollars. “Our expectations for 2014 are that the volume of e-commerce market will reach about \$ 1,2 billion, while Internet advertising will grow almost twice”, – said Zhumagaliyev at the international conference of Digital Communications in Kazakhstan. At the time of the interview, according to the assessment of Zhumagaliyev, e-commerce turns over in Kazakhstan amounted to about 300 million US dollars, the volume of online advertising – about 6 million US dollars. Almost it is about the growth of approximately 4 times in 2–3 years.

At the same time, Konstantin Gorozhankin, the head of CEO Processing.kz, gives more optimistic prognosis. According to him, by 2015, e-commerce market in Kazakhstan will

increase by nine times. He said that at the moment the market of e-commerce in Kazakhstan is about 0,45 percent of the total market. Assessments of the growth are as followings: in 2013 the share of e-commerce will account for 1,8 per cent, in 2014 – 2,7%, and in 2015 will reach four per cent by the time the market of e-commerce will amount to 3,6 billion US dollars. There are generally accepted estimates which are statistically adjusted, and so, they say that the threshold for the Internet audience composes 20%. From this figure begins the growing demand for online services. Kazakhstan has already reached this figure, and in big cities dramatically exceeds this mark. The boom of the e-commerce Konstantin expects in 2012–2013 [1]. We are now just in this time interval, and some data suggest that the prognosis is becoming reality.

Less optimistic is Vice-Minister of Transport and Communications of Kazakhstan Saken Sarsenov. In particular, in early October of this year at a public audition of the program “Information Kazakhstan-2020”, he noted that according to his estimates e-commerce market in Kazakhstan will reach 4 billion dollars only in 2020. I do not exclude that in his estimation taking into account the risks that are hovering over the world economy as a danger of “second coming” of the crisis that threatens to eclipse in scope last.

At the same time, there are other, more modest evaluations of existing realities. In particular, according to a survey conducted by analytical research center «Chocolife.me», the entire e-commerce market in Kazakhstan in 2011 amounted to over 133 million dollars. Basically, it creates «Air Astana» and other companies for that sale air and rail/train tickets, it was said in the company. Regarding payment methods, in this case 78,36%

of buyers are calculated by bank cards, 18,31% and 3,33% in a cash to pay for the services via terminals. Leading position in terms of revenue took the following online retailers: «Disti» – 5,7 million, «Sulpak» – 3,7 million dollars, «Alser» – 3,6 million US dollars. Analysis and prognosis of electronic business development in Kazakhstan is presented in the Figure.



Analysis and prognosis of electronic business development in Kazakhstan

E-business – is the result of a traditional business, which has led to the emergence of electronic commerce form. E-business is based on Internet technologies that allow you to streamline business processes, increase their productivity and efficiency [2]. Online commerce (e-commerce) – is just one of the possibilities that offered. Due to accessibility and broad coverage of the Internet e-business offers companies easy ability to communicate with customers, partners, suppliers and employees.

Business models of project organizational structure are built depending on the client. Business classification from this point of view has identified number of business models:

1. B2B (business-to-business) – business for business.
2. B2C (business-to-consumer) – a business that focuses on the physical end-consumer.
3. C2C (consumer-to-consumer) – a business that provides interaction between a large number of physical users.
4. C2B (consumer-to-business) – price ticket system, in which consumers would like to buy products and services.
5. B2A (business-to-administration) – business operating transactions between private companies and government organizations (administration).
6. C2A (consumer-to-administration) – a business built on relationships organization of individuals and public services.

In addition, there are a number of exotic models, associated with types of business, built on a business-to-government interactions

(B2G), government to citizens (G2C), government-to-government (G2G), and so on.

The main types of e-business:

1. Internet shops. Online stores are the embodiment of e-commerce in its classical sense (buying and selling goods and services on the Internet). Online store is a company which trades on the Internet using the Web-site. Online store website contains catalogs of goods with their descriptions, photos and prices. A special form of online-ordering allows customers to select, order and pay for products they are interested in, to calculate in advance the cost of the entire order, including delivery. As a rule, the customer is able to track the online store, at what stage is the execution of his order. Online stores often place in special sections or in descriptions of specific products customer reviews and other useful information for customers. The assortment online store of goods can range from a few to many tens of thousands of names. Depending on the selected conditions, the customer pays for the order on delivery or prepayment commits one of the traditional methods or by using specialized systems of Internet payments.

2. Corporate websites. The main function of the corporate website is the support for existing real business. This support can be expressed as follows:

- 1) Promotion of goods and services on the Internet;
- 2) Expansion of the customer base;
- 3) Formation of the dealer network, attracting franchisees organizations (Upgrade Binaries companies interested in promoting their products in the regional markets);
- 4) Catalogues, ratings, searching system;
- 5) Content projects;
- 6) Information business network;
- 7) Financial Services;
- 8) Advertising Business;
- 9) Communication services, means of communication;
- 10) Trading places.

The idea of an online market place looks very attractive. Its essence is as following: to create a website interface that allows sellers to put up for sale its products and customers to choose the best deals and make purchases. The initial audience of buyers and sellers is formed by advertising media and personal contacts. The process of making deals begins. It is understood that all financial transactions are done via the Internet, and in the usual way. With non-existence of geographical barriers, participation in trade at this site may take us all over the world. Sellers and buyers are both legal and

natural persons. Trading online platform can be organized in three main ways: exchange, auction or catalog.

3. Distance learning and online-consultation [5].

4. Gambling network.

Methodology of e-business based on Java-technologies

On the basis of e-business, you can consider the development of online store for the sale and promotion of products. In the first place in the construction of online store, it is necessary to develop the architecture of an online store.

System architecture

Commerce framework should ensure the following basic principles: centralized approach of information processing; avoid duplication of data entry and increasing its reliability by identifying a previously entered information; a mechanism of differentiation of user access rights should be in the system; providing conflict-free functions, conflict-free expansion of the users working with the store [3].

On the physical level online store consists of two parts:

1. The software part: Databases on SQL Server database platform; The set of software modules; The set of software modules that provide the ability to upload and download external reporting data.

2. Hardware: Hardware-software complex for the database server; The hardware-software system to accommodate the application server; The logical architecture of the Internet shop is divided into 3 levels (The data source level – provides storage and access to data systems, transaction management; The level of application logic – provides data transfer between the presentation layer and the data source, perform the operation on the basis of the data entered by

the user; The presentation layer (user) – provides interfaces for displaying and entering information, processes the user's commands and then convert them into operation at the level of application logic.

The structure and operation of the system

The following modules (subsystems) have been allocated on the basis of architectural solutions: Module "Frontend"; Module "Backend"; Module "Data Storage".

Module "Frontend" is intended to provide a single entry point to the Internet shop for its users. The module must be a site and should provide all interested persons with information about the sale of goods. Registered user Module should provide an opportunity to work in a private office and perform the following functions: Authorization Online, Editing of personal data, Order Product, Movement of goods into the basket, View order status.

Module "Backend" for feedback with users module represents administrative section, which provides the following functions: Creating and populating the sections/subsections of the site menu, Adding product info, Adding product to checkout.

Module "Data Storage" provides storage of information on the Internet to create a partition store. By the logic of the application users and site administrators contact point in the module with the request. The main role and function are shown below.

Business processes used in the system. The main task of an online store is ordering of the goods and their processing. Based on these data basic business processes have been developed and used in the system.

1) Registration in the online store:

To register in the store the user must complete the registration process by following sequences: In the registration window click on

Roles and functions in the system

Roles	Functions
A guest	Browse the product catalog Registration on the site
Registered user	Log on website Edit personal data Ordering goods Moving goods into the basket View Order Status
Moderator of store	Creating and filling sections / subsections of the site menu Adding information about the product Adding product to cart and checkout Change order status

the button “Register”; To specify registration information, e-mail address, which will be tied to a user account in the future; Confirmation of registration must come to the email address of the user, which he pointed at registration; The letter must go through a registration confirmation and the user is automatically added to the account in the system.

2) Order of the product:

To order from the online store you must first login, and perform the following steps: Select the desired item; Add selected items; Order product, which is in the basket, Confirm the order by receiving a notification e-mail.

3) Fill the content of the online store:

The content of the online store is filled with system administrators. To do this, the administrator must select the relevant sections and add information on the goods.

4) The application process to order the goods:

After ordering goods, application is processed by the administrator. The administrator checks the goods associated with the users. For administrator realized workstation for processing orders for goods.

Technologies used during system development

Java has become an indispensable tool for developers: writing software on one platform and run on virtually any platform; the creation of programs that run in a web browser and have access to Web services; the development of applications on the server side for forums on the Internet, stores, polls, HTML forms processing and many others; union applications or services using the Java language to create highly specialized applications or services; the creation of multi-functional and efficient applications for mobile phones, remote processors, microcontrollers, wireless modules, sensors, gateways, consumer products, and practically any other categories of electronic devices [9].

Java Technologies for the development of e-business systems: Java Foundation Classes (Swing) (JFC), Java Help, Due to Java Native Interface (JNI), Java Platform Debugger Architecture (JPDA), The structure of Java 2D API, Technology Java Web Start, Certification Path API, Java Database Connectivity (JDBC), Java Advanced Imaging (JAI), Java Authentication and Authorization Service (JAAS), Java Cryptography Extension (JCE), Java Data Objects (JDO), Package Java Management Extensions (JMX), Java Media Framework (JMF), Java Naming and Directory Interface (JNDI), Java

Secure Socket Extensions (JSSE), Java Speech API (JSAPI), Java 3D [10].

In the conclusion, analysis and forecast of development of electronic business in Kazakhstan showed that e-business in Kazakhstan will develop. Today, e-business is used in the vast majority of information systems with distributed structure. The realization of distributed e-business systems based on JAVA-technology is one way of e-business development in Kazakhstan.

The article analyzes the state of e-business in Kazakhstan, prospects of electronic business development in Kazakhstan; describes a distributed system and the types of distributed systems, logical software layers and architecture of distributed systems, technology for building distributed systems, describes the technology implementation of an online store as a distributed system based on JAVA-technologies [4].

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