

Vertical Web-Portals – Design and Implementation

Irina Noninska, Elina Asenova

Abstract: *The paper presents an approach for organization and control of the basic business processes in B2B e-commerce. A vertical Web-portal is designed on the basis of contemporary Java-technology to manage the financial information flow between independent customers and to coordinate their business activities.*

Key words: *Web-portal, Model B2B, e-commerce, Vertical Portal*

INTRODUCTION

Recently e-commerce becomes more dynamic, cheap and convenient, which leads to organizing the so-called open e-commerce. Different enterprises put their services and resources together in the area of an open e-commerce and appear like traditional enterprises to their customers, but build a virtual enterprise, as well. The relationship between members in such area is different from that within a traditional enterprise. Hence, new concepts, mechanisms and tools must take place in open e-commerce and numerous technological problems have to be solved, especially in B2B model [1, 2].

For that purpose, Web-based business applications are gaining speed and taking a larger share in the field of e-commerce. They have evolved from basic standalone or client-server applications to become large scale inter-network virtual infrastructures and now are able to serve the needs not only of a single person or organization, but to stand for an integration point of a vertical market. Integration of business processes in a vertical market could be realized by so called vertical web-portals. This type of portal represents a centralized source of services and information, specific to a given economy sector and could be realized for relatively tight range of business customers. The second type – horizontal portals combine a wide range of services, information, etc. and their building is generally simple, because the main principle valid in this process is to make the site present anything for many types of users [3-5].

As soon as there are no clear standards or definite recommendation for vertical portal building, it becomes a new dimension in Web mastering. If Web-portals in general are standalone, integrated, unrestricted and useful access to information, applications and people, for vertical portals we must add one adjective more – expert. Hence, vertical portals could be defined as an expert information source with unrestricted but selective access policy. Their particular nature requires more specialized technology and development platform.

The paper presents an approach for organization and control of the basic business processes in B2B e-commerce. A vertical Web-portal is designed on the basis of contemporary technology to submit financial data for a closed customer group and to coordinate their activities.

DESIGN OF B2B VERTICAL PORTAL

This chapter deals with a vertical internet B2B portal which is implemented as a combination between a virtual dashboard enterprise planning system and a financial information system. The information and functions which customers can get use depend on their type form the range of services which the vertical portal (V-portal) provides. The purpose of the system is managing the information flow between independent customers and deploying business processes. It supplies users with the ability to personalize not only the view but the content of the web-pages, which contain the financial information they need as well.

The implemented vertical financial portal provides its customers with three access levels, which correspondingly defined by the three basic roles:

- Classical user – free registration into the V-portal, which provides the customer with a number of basic services.
- Premium user – paid registration into the V-portal, which presents the customers besides the services from the previous level a set of several real-time services.
- Administrator access – this user-role is connected with the maintenance of the correct functioning of the system, as well as the output modules and the data organization modules.

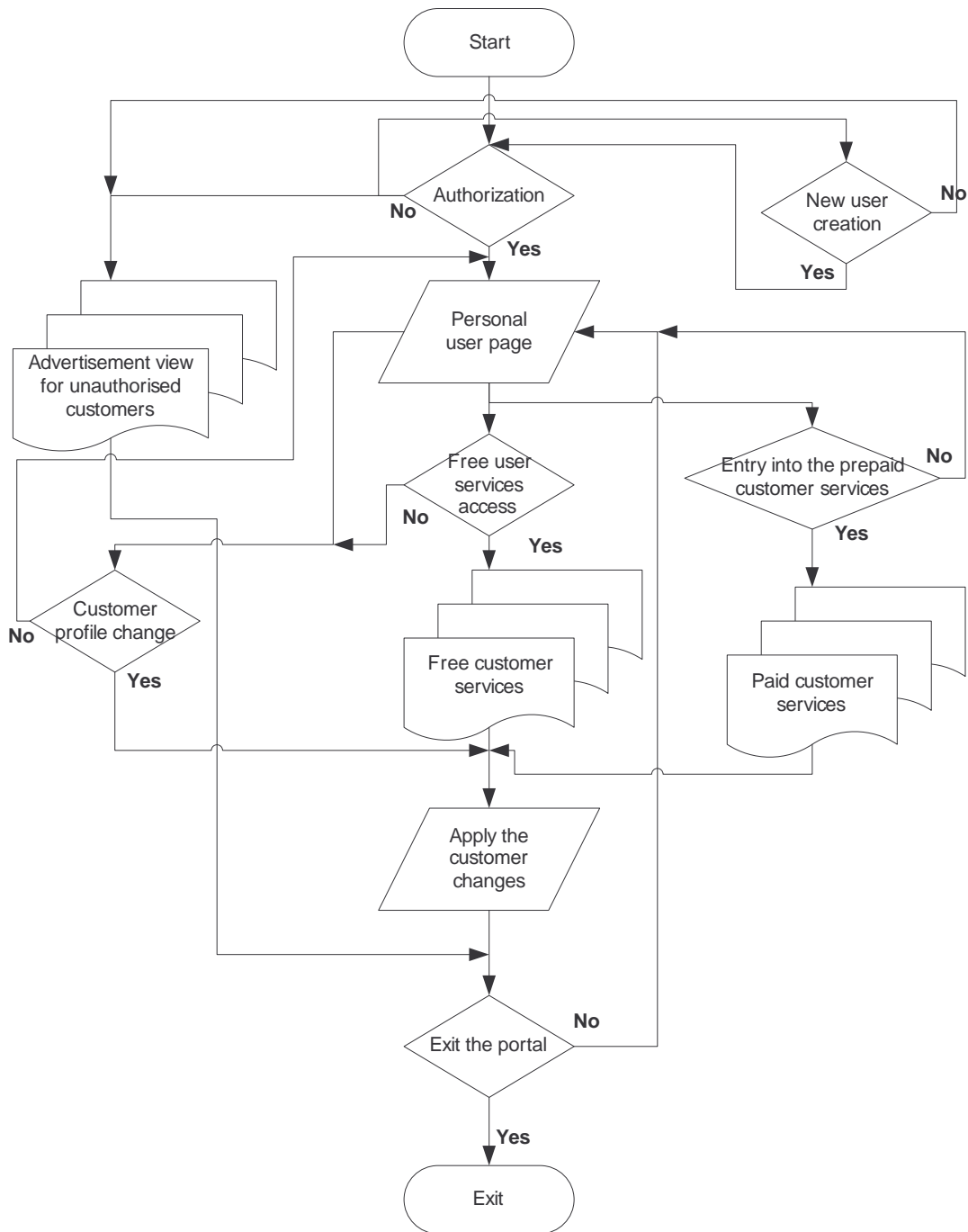


Fig. 1 General Scheme of the vertical portal

Each service provided by the V-portal is formed as a separate module, which encapsulates the functions for the service execution. This method not only makes the debugging process easier, it also provides modularity, which would be appropriate for scalability, reusability and future reconfigurations of the vortal. The services provided by the V-portal are also built on a modular principle, depending on the access level and roles of the users, as shown in fig.1. Some of the major services provided for the corresponding user-access group are described below:

- Unregistered users :
 - Advertisements review;
 - Ability to create a free registration;
 - Ability to create a paid registration;
 - General review of themes in the site's forum
- Free access users:
 - Real-time currency quotes review;
 - Personal user-web page customization;
 - Forum participation
 - Personal online resume and open positions search
 - Stock indexes real-time overview
 - Creation of personal archive with article-links
- Premium (paid) aid users:
 - Automated real-time stock analysis;
 - Virtual dashboard;
 - Automated quotes prognoses;
 - Margin calculation of tasks set and results achieved;
 - Creation of a personal article archive;
 - Advertising rights
- Administrator users :
 - Setting roles to resources owned by the user or other users;
 - Database administration;
 - Access rights (roles) administration;
 - Advertisement/banner administration;
 - Miscellaneous.

STRUCTURE AND FUNCTIONS OF THE WEB-PORTAL

The vortal is implemented on the fundamental basis of the J2EE Enterprise Java Beans (EJB) technology for creating the business methods and infrastructure based on XML manifest and naming technologies. The EJB technology provides a save and yet powerful way data access and manipulation in the terms of the modularity inherent to Java and enabling the developer to concentrate on the pure functionality of the system. This is possible due to some serialization responsibilities, pooling etc. being transferred to the EJB-containers, run on specialized business servers. Also powerful tools like XDoclet automate certain sides of EJB implementation, such as interface generation, JNDI names and EJB Home-interface adding to the bean objects.

The so implemented vertical B2B portal is aimed to provide his customers a systemized and specialized source of financial information, which does not only serve for visualizing data, but also to present it in a way chosen by the users themselves. Such kind of portal, could easily be applied to B2C e-commerce, If the information presented is formed in a more popular and user-friendly way, and if the services style becomes simplified and easier to understand to the average internet users, which are not financial experts.

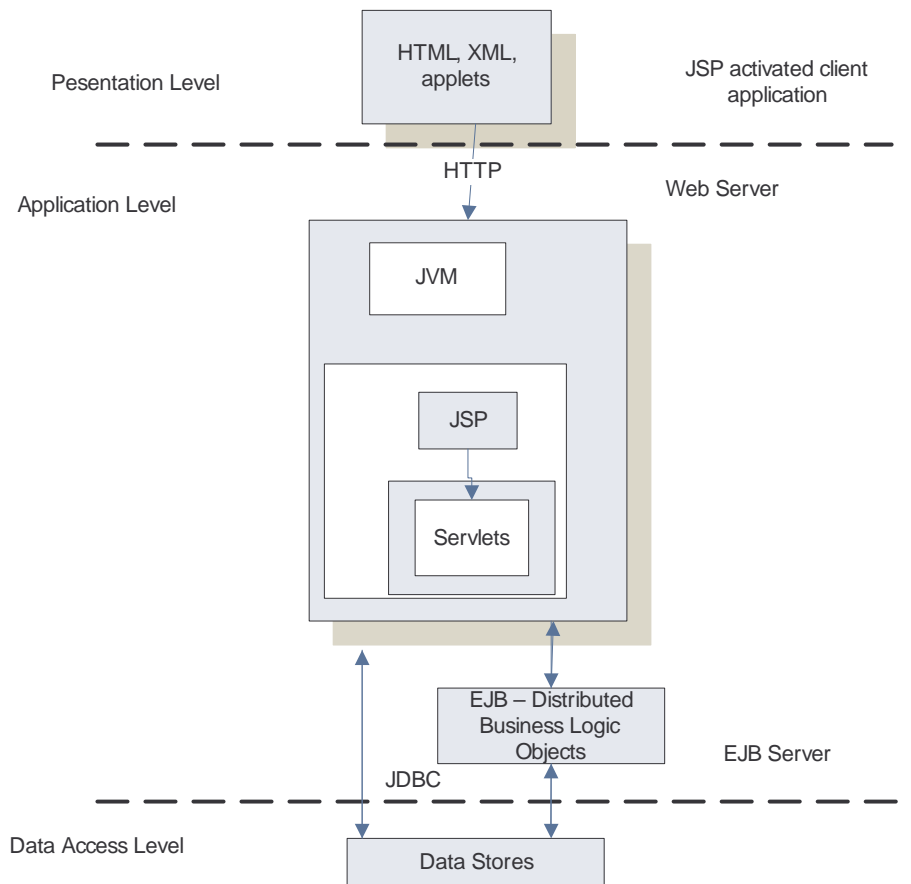


Fig. 2 General Scheme of the vertical portal deployment

CONCLUSION

The vertical B2B portal, described above, possess the minimum complete score of functions and services, which specify this type of applications, with the project being ready for future scaling and modification. An example of such future scaling is the transforming of the virtual dashboard into a full-size Enterprise Resource Planning system.

This is made possible due to the modularity provided by the Java 2 Enterprise Edition platform being a solution and environment for development and execution of business applications. As a result of this the present vertical portal could sand for a basis of the development of other vertival and horizontal portals, which might execute in other business field or use a similar architectural solution or functional concept.

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ABOUT THE AUTHORS

Associate Professor Irina Noninska, Ph.D., Department of Computer Systems,
Technical University-Sofia, Phone: +359 02 965-34-71, E-mail: irno@tu-sofia.bg.
MSc Elina Asenova, Phone: +359 889 98 26 67, e-mail: Elina.Assenova@gmail.com .