

WEB application design for business process analysis and improvement

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Abstract - This paper presents the Web Site Design Method – WSDM, user oriented method for Web application design in phases that are relevant for Web portal development. The phases are described in a sense of relevance in the methodological framework. This method is proposed for the development of software tools for business process analysis and improvement.

I. INTRODUCTION

The importance of developing software tools for business process analysis and improvement that allow the use of various Internet resources requires the use of a methodological approach to developing software tools [1]. It is expected that software tools for business process analysis and improvement enable completion of the task, which are intended for users in an acceptable time frame. This includes the development of software tools for business process analysis and improvement that are based on user-oriented methods for developing and implementing software tools. This paper presents a Web Site Design Method (WSDM) as a method that may be suitable for development of software tools for business process analysis and improvement, which was developed under the project titled "The development of software tools for business process analysis and improvement" supported by Ministry of Science of Republic of Serbia.

II. WSDM METHOD

WSDM is a user-friendly method for designing Web software applications [2]. The problem of designing related to this method is reduced to a few tasks that must be met, namely:

1. Selection of data to be displayed on the Web software application and conceptual modeling of selected data,
2. Web site design structure based on the navigation modeling,
3. Design of a visual presentation screen display in a Web site to view the program content.

Before you start designing, it is necessary to identify and formulate the intention and objectives of developing software tools for business process analysis and

improvement, and to determine the subject of a developing software tools for business process analysis and improvement, and declare the target user group. Figure 1 shows phase model method according to [3].

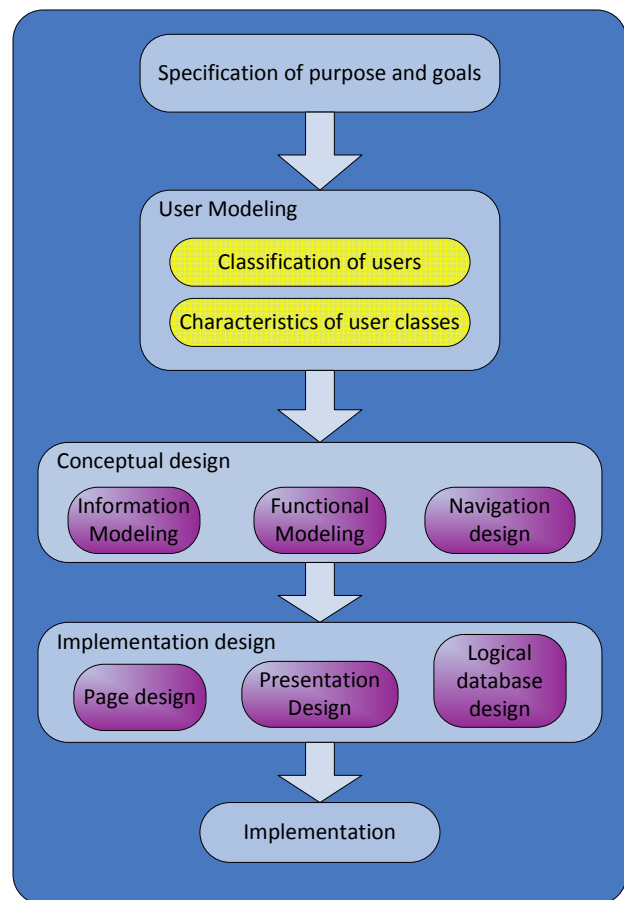


Figure 1. Phase model for WSDM developing method

III. USER MODELING PHASE

Phase two includes the user modeling process: classification and characterization of user's class. The classification process is performed in a way that users are identified and potential users are classified to different classes. Class consists of users who have the same information and functional requirements. In the process of

characterization of the user class, the class describes the characteristics of the users in details.

As a result of user modeling, there is a set of user classes with informal descriptions of their requirements, information, functional and navigation, as well as some other characteristics.

In the user modeling stage, two approaches are separated and are concentrated around two different issues. The first would be a user-oriented approach that focuses on the question "Who are the users? ". A second information-oriented approach is oriented around the question "What information would be necessary for development of software tools for business process analysis and improvement to contain? ".

According to [2], the first approach that is user-friendly is important in relation to information access. In the studies that were conducted before development of software tools for business process analysis and improvement, it was concluded that there is no reason for giving priority to user-oriented approach to information access. When developing software tools for business process analysis and improvement both approaches have a very important role. In identifying different groups of users, multiple types of information shall be determined that each user group may demand and the type of actions that they may take. Thus, that aspect of the information is equally important as other user aspects.

The processes that take place in the user modelings are:

Identification and analysis of users, based on which carried a process of further division into different customer classes,

Task of modeling the user is a process, which is most relevant for each user class to be identified and described. This task considers activity where the user interacts with the software tool for business process analysis and improvement. Class of users, a group of potential users of the same tasks is characterized by interaction with specific software tool for business process analysis and improvement.

Modeling user profile is a process in which the characteristics of user classes have to be further elaborated by the specific user profiles. Each profile lists the characteristics that have a common role in the design of software tool for business process analysis and improvement and define the requirements for navigation and presentation.

IV. CONCEPTUAL MODELING PHASE

In the conceptual modeling phase four processes take place [4]. The first is that information modeling is performed by the fragmentation of information based on various information requests of the user class. By combining these pieces of information into a single model

the shape of the information software tools for business process analysis and improvement is formed. The information model describes the available information independently from the specific usage of software tool for business process analysis and improvement. At this stage, which is also referred as phase information tasks, a conceptual model for each task is generated. Here, we clearly identify the information related to user classes and their tasks. For each task, a conceptual model of that task defines the user class. Conceptual model of the task gets together different conceptual models of certain classes of user tasks.

The second process is the functional modeling or creation of the functional parts that describe the functionality required for different classes of users.

The third process is a design where navigation is modeled, as different user classes will be able to move through the available information on the software tool for business process analysis and improvement. A special navigation path is created for each class of users. In this phase, the requirements for navigation take the stage were they are collected from the user model of the specific user classes. The navigation model of the software tool for business process analysis and improvement design consists of navigation paths. Conceptual modeling results in a conceptual model of a software tools for business process analysis and improvement represents the integration of information model and functional model of the navigation model. In the navigation modeling phase the content of the software tool for business process analysis and improvement are structured.

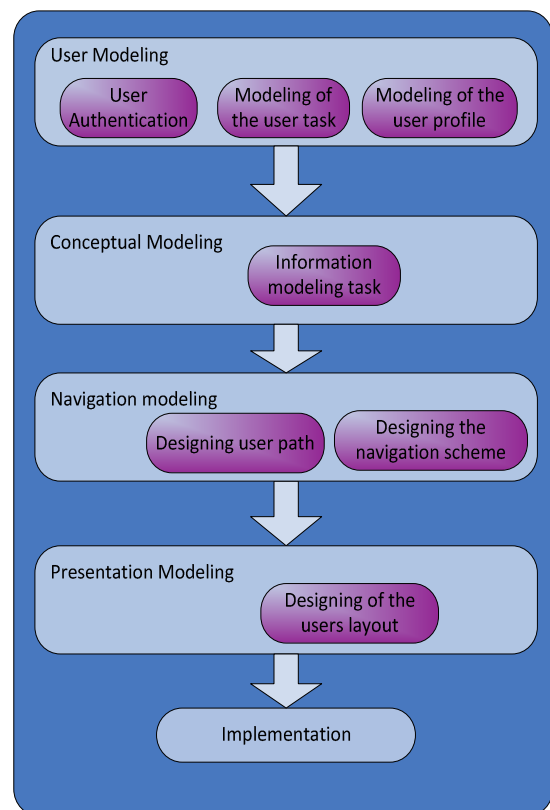


Figure 2. Parse phases of the WSDM method

In the fourth process - presentational modeling, describes how information in the navigation scheme should be presented to user. Presentation modeling should determine the page layout that shows the user where to look, what is important, etc. The partitioning of the page into clearly defined areas and their logical connections will improve the user's understanding of the content. Presentation model focuses on the structural organization of the presentation. It is important to define the outline of the presentation dedicated to each class, which includes the most relevant tasks and links.

V. IMPLEMENTATION - DESIGNING PHASE

The final phase in the implementation of WSDM methodology is a phase of design. The concrete realization phase of implementing the software tool for business process analysis and improvement is done using the selected implementation environment [3]. During this phase, the development of the structure of the tool is improved.

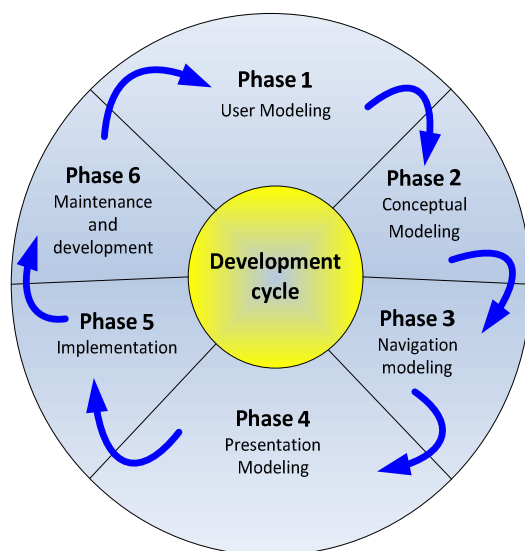


Figure 3. Cyclic development process

The software tool for business process analysis and improvement development cycle can be represented as

shown in Figure 3, where the final phase involved the development and maintenance.

However, a more detailed elaboration of the development cycle of the software tool for business process analysis and improvement would be too extensive for the scope of this work. Thus, the implementation phase is just mentioned here.

VI. CONCLUSION

Application of the user based WSDM method can contribute to solving the problem of design and implementation of the software tools for business process analysis and improvement. At various stages of modeling, the WSDM method, which is mentioned in this paper, enables resolving issues related to the problem of determining which user groups exists. In this particular stage, phases are modified in accordance with the supposed requirements that arose from applying the method to design a software tools for business process analysis and improvement. The contribution of this method is provided in the rationalization of time that will be required for the realization and implementation of the software tool for business process analysis and improvement.

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