Chapter VIII
A Personalized Portal on the Basis of Semantic Models and Rules

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ABSTRACT

A portal is a Web-based single point of access that delivers information and applications to a user on its own and by the integration of external services. With most portals, various users in the role of customer, supplier, employee, and so forth, can configure the available content and the functionalities in their own way and access them over multitude of devices—mobile phone, PDA, and PC to name a few (Priebe; Pernul, 2003). Whereas this type of portal can be seen as an adaptable system, adaptive portals shall adapt themselves to the individual user.

INTRODUCTION

In general, portal implementations resemble a multi-tier architecture. Figure 1 shows such an architecture that has been adopted from (Sun Microsystems, 2005a) and slightly modified to represent the extension with semantic data sources. Apparently, the respective tiers are the client, the data sources, and the server that can be further decomposed into a web and a domain layer.

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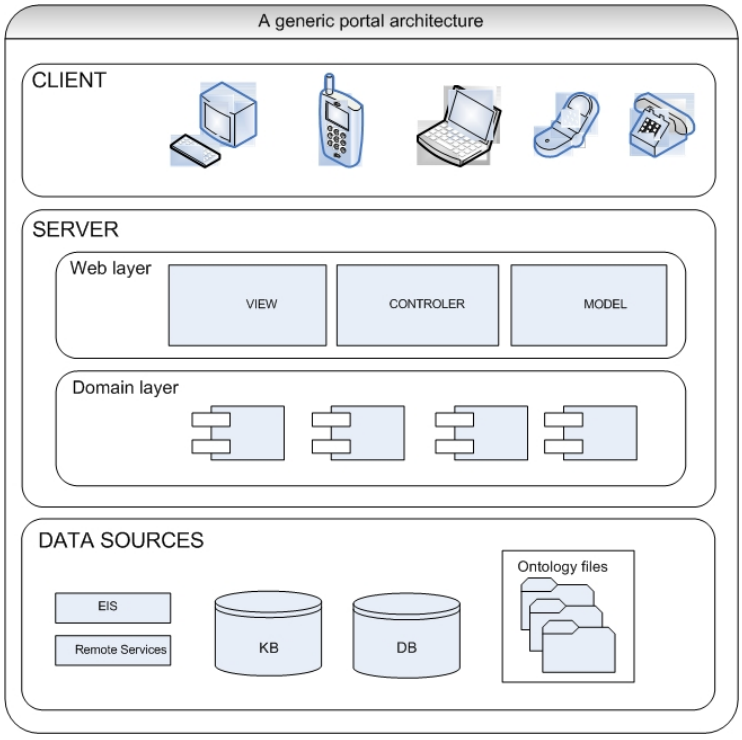
THE WEB LAYER

Various types of client that sit on different devices with different supports in terms of content markup languages requests content by virtue of a communication protocol. The most common protocol on the internet is the HTTP, which, combined with SSL, cater for a secured exchange of data between the server and the client machine. These HTTP request are then processed by the web container situated at server side. Using other protocols, such as SOAP, RMI and IIOP, specific clients could directly invoke the services managed by the application container (Sun Microsystems, 2005b)—which are illustrated as domain components in figure 1.

Meanwhile, the Model-View-Controller (MVC) has become the foremost pattern for structuring the web tier. This design pattern involves a division of a functional module into three components with different responsibility. The view obtains data from the model and presents it to the user. The model encapsulates data and functionality of the domain logic, e.g. of one or several domain components. The controller is the central component in that it maps request data into operations of the model and notifies the view of respective changes. Among other merits, this division implies an isolation of the presentation logic from the domain logic. That means, changes in the UI can be implemented without modification of the underlying processing logic—which is valuable since drivers and rates of changes of the web tier, viz. the user interface, and the domain are different. Please refer to (Krasner; Pope, 1988) for a more detailed discussion on MVC.

Common implementations of the MVC-architecture are based on servlets, JSPs and portlets.

Figure 1. A generic portal architecture, Source: Sun Microsystems, 2005a



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