Chapter XII

Creating Adaptive Web Sites Using Personalization Techniques: A Unified, Integrated Approach and the Role of Evaluation

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This chapter introduces a comprehensive review in personalization techniques and presents key features of personalized e-services. A framework is also introduced for integrating different personalization techniques into a single unified approach along the various segments of the customer decision process and it argues over the enhancement of the traditional personalization chain with an evaluation phase from which the results can provide feedback into the personalization techniques. Finally, based on the underlined approaches and assumptions, an extended personalization architecture is proposed including the evaluation layer. The vision of the authors is to embed a learning capability (through a fuzzy logic system, a neural network etc.) into the personalization techniques so that they avoid making the same unsuccessful suggestions in terms of links and features not being valued by the user. By achieving this goal, personalization-enabled web sites will behave as adaptive and evolutionary information systems.

INTRODUCTION

"Personalization uses information from tracking, mining and data analysis to customize a person's interaction with a company's products, services, web site and employees. Consumers and companies can benefit from the unique treatment resulting from personalization. Providing content of special interest to your visitor can help establish a relationship that you can build upon each time that person returns to your site" (Deitel et al., 2001). Not only time constraints but also the "lost into the cyberspace" phenomenon create pressure over the user to browse as fast as possible the Web content to arrive at what s/he is really looking for. Therefore, personalization aims at satisfying the user by presenting those items which are indeed valuable for him/her and optimise the interaction for maximum efficiency and effectiveness. Subsequently, the creation of adaptive web sites emerges as a sine qua non criterion for contemporary high quality e-services.

Personalization can be applied either at the form or at the content. Consequently, it is usually implemented at two levels: at the level of the interface or context through which the user interacts with the content and at the level of the content itself. Most of the contemporary web sites offer the user the capability of creating their own web site, e.g., "My Banking Page," not only to endow it with the feeling of ownership—obviously what you own, you also care for—but also to allow the user to interact in the ways s/he defines as more appropriate and comfortable. "Excite is a search engine that offers "My Excite Start Page." This allows you to select the content and style that appears on your Excite home page" (Deitel et al., 2001). Such a user-initiated process is sometimes referred to in the literature as "personalization," whereas the customisation, which is used in a more generic meaning, that results "from the site's ability to tailor itself to each use" and is "designed to be altered by the organization" is called "tailoring" (Rayport & Jaworski, 2001). This chapter prefers to use the term personalization to deal only with the organization-initiated customisation of the web content and services and does not at all discuss how to configure a web site according to an individual's preferences that are explicitly input.

Personalization or "tailoring by site enables the site to reconfigure itself based on past behaviour by the user or by other users with similar profiles. These sites can make recommendations based on past purchases, can filter marketing messages based on user interests and adjust prices and products based on user profiles. Amazon makes recommendations across product categories. For example, based on a user's history of book purchases, the site recommends CDs or DVDs that others with similar book interests have bought" (Rayport & Jaworski, 2001). In essence, personalization is about correctly guessing what the user perceives as

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