Chapter 5.6
Personalization Services for Online Collaboration and Learning

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ABSTRACT

Collaboration tools can be exploited as virtual spaces that satisfy the community members' needs to construct and refine their ideas, opinions, and thoughts in meaningful ways, in order to suc-cessfully assist individual and community learning. More specifically, collaboration tools when properly personalized can aid individuals to articulate their personal standpoints in such a way that can be proven useful for the rest of the community where they belong. Personalization services, when properly integrated to collaboration tools, can be an aide to the development of learning skills, to the interaction with other actors, as well as to the growth of the learners' autonomy and self-direction. This work pre-sents a framework of personalization services that has been developed to address the requirements for efficient and effective collaboration between online communities' members that can act as catalysts for individual and community learning.

INTRODUCTION

Computer Supported Collaborative Work (CSCW) has long been the subject of interest for various disciplines and research fields. CSCW systems are collaborative environments that support dispersed working groups so as to improve quality and productivity (Eseryel *et al*., 2002). Varying from stand alone applications to web-based solutions for the provision of communication, cooperation and coordination services, software tools supporting collaborative work -commonly referred to as *groupware*- provide individuals and organizations with support for group cooperation and task orientation, especially in distributed or networked settings (Ackerman *et al*. 2008). Such technologies have enhanced collaboration, affecting peoples' everyday working and learning practices. Furthermore, one of the CSCW discipline core aims has always been to assist individuals and organisations in knowledge sharing, whenever it is required and wherever it is located (Lipnack and Stamps, 1997). Nevertheless, research findings on the usage of collaboration tools show that support of group members in expressing personal ideas and opinions, and the provision with adequate means for the articulation and sharing of their knowledge is an extremely complicated and difficult task (Olson & Olson, 2000). Furthermore, it is generally acknowledged that traditional software approaches supporting collaboration are no longer sufficient to support contemporary communication and collaboration needs (Moor & Aakhus, 2006).

This work concerns the design of personalized web-based tools that enable collaborative work, emphasis given to aspects such as the sharing of knowledge and consequently to learning. We envisage collaboration tools that can promote learning and encourage creative, parallel and lateral thinking during collaboration. Towards this, we argue that personalized services can be of great value as they enable the provision of services tailored according to an individual's (or community's when applicable) skills, needs and preferences. Thus, we first performed a comprehensive literature and practice survey of related issues regarding Communities of Practice, Collaboration and Learning. Then, we developed a generic Learner Profile model to formalize CoP members as human actors in settings where learning takes place. The Learner Profile presented in this chapter contributes to the proper user modelling required for the development of virtual environments for collaboration.

The remainder of this chapter is structured as follows. Section 2 discusses issues related to online collaboration and learning. Section 3 provides an overview of user modelling issues and presents the Learner Profile model of our approach. Section 4 provides information about the acquisition of the data required for the population of the proposed Learner Profile. Section 5 presents the proposed set of personalized collaboration services towards learning and their relation to the proposed Learner Profile. Section 6 concludes with final remarks and future work directions.

ONLINE COLLABORATION AND LEARNING

The Internet is an artefact that emerged from people's need to communicate and share content that enables various kinds of web-based collaboration and virtual teamwork. Early online communities were mostly formed through the use of emailing lists, or bulletin boards. Today, the availability of *social software* applications has resulted in the phenomenal growth of user embodiment in virtual spaces and the constant emergence of online communities (Anderson, 2007). The notion of social software, i.e. software that supports group communications, is perceived as a particular type of software that concerns itself with the augmentation of human social and/or collaborative abilities. As clearly stated in (Boulos & Wheeler, 2007), the increased user

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