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Chapter XVI

A Model for Selecting Techniques in Distributed Requirement Elicitation Processes

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Abstract

This chapter introduces a model based on techniques from cognitive psychology as a means to improve the requirement elicitation in global software development projects. Since distance negatively affects communication and control, distributed development processes that are crucially based on communication, such as requirements elicitation, have to be specially rethought in order to minimize critical situations. This chapter proposes reducing problems in communication by selecting a suite of appropriate elicitation techniques and groupware tools according to stakeholders'

cognitive styles. It also shows how information about stakeholders' personalities can be used to make them feel comfortable and to improve their performances when working in a group.

Introduction

The development of software in scenarios in which stakeholders are in many geographically distanced sites increases day by day. One of the main reasons for such a growth is the possibility of counting on human resources from all around the world while travel costs are reduced to a minimum or do not even exist (Lloyd, Rosson, & Arthur, 2002).

As a consequence of working in a geographically dispersed manner, stakeholders must communicate with each other by means of specially designed technology called groupware. In doing so, members of a distributed requirement elicitation process have to deal not only with the normal challenges of a requirement elicitation process (Davis, 1993; Loucopoulos & Karakostas, 1995) but also with those derived from the lack of face-to-face interaction, time difference between sites, and the cultural diversity of stakeholders, which are typical of distributed environments (Damian & Zowghi, 2002).

There are several research areas that have attempted to find solutions to communication problems in workgroups. One of them is computer-supported cooperative work (CSCW), which focuses on providing technologies to enable communication and also analyzes human behavior when working in a group. Another is cognitive informatics, an interdisciplinary area that applies concepts from psychology and other cognitive sciences to improve processes in engineering disciplines, such as informatics, computing, and software engineering (Chiew & Wang, 2003; Wang, 2002).

Since our main goal is to enhance interpersonal communication in geographically distributed teams, concepts from both areas come together. On the one hand, people who are working at various geographic sites communicate with each other using groupware, which is part of the studies in CSCW. Examples of groupware used during multi-site developments are e-mails, forums, shared whiteboards, chat, instant messaging, and videoconferencing, among others (Damian & Zowghi, 2002; Lloyd et al., 2002). On the other hand, communication among people involves aspects of human processing mechanisms that are analyzed by the cognitive sciences. In our proposal, we are particularly interested in some techniques from the field of psychology, called learning style models, which may be useful to select groupware tools and elicitation techniques according to the stakeholders' cognitive styles.