Chapter X

Planning and Managing the Human Factors for the Adoption and Diffusion of Object-Oriented Software Development Processes

Magdy K. Serour
University of Technology, Sydney, Australia

Abstract

Although there are a large number of contemporary software development processes/methodologies available to assist and guide software professionals in developing software systems, there is no specific process that can assist organizations in planning and managing their transition to this new work environment. As a result, there are still a large number of information technology (IT) organizations that have not yet implemented any object-oriented (OO) process. For them, the transition to a new work
environment and the adoption and utilization of a software process implies a number of problems, commonly including necessary human and organizational resistance to the ensuing cultural change. This chapter provides IT organizations and professionals with insights into the most important key success factors that may promote the entire process of organizational change. We investigate the effect of various human factors on the adoption and diffusion of an object-oriented software development process. Some of the human factors include motivation, leadership, resistance to culture change, and willingness and readiness to change. In addition, this chapter explores the significant role of these factors in controlling the entire process of implementing an OO process in practice, emphasizing the significance of planning and managing these “soft” factors to achieve clear advantages and gain enviable results.

Introduction

This chapter investigates and examines the effect of various human behavioral patterns during the organizational transition to an object-oriented (OO) work environment, and the adoption and diffusion of an OO software development process. Technology is only a tool; what makes the difference is the individual who makes use of the technology, and the culture that motivates people to realize and understand the advantages of adopting such technology (Zakaria & Yusof, 2001).

During any paradigm shift, human tendencies play a critical role that may invariably result in either success or failure. Examples of such human aspects may include cultural change coupled with people’s resistance, motivation, education and training, communications, and leadership. Collectively, these factors can form either opposing or supporting forces that may influence and impact on the entire transition process. Therefore, human aspects must be seriously considered, well addressed, planned, and managed for a rewarding result.

Past studies (e.g., Gibson, 1999; Ioannidis & Gopalakrishnan, 1999; Nambisan & Wang, 1999; Auer & Dobler, 2000; Jurison, 2000; Burshy, 2001) of the process of organizational transition have related the transition process to how organizations adopted innovation, ideas, new technologies (e.g., Web services...