Chapter XI

Implementation of Collaborative Technologies as a Learning Process

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ABSTRACT

Nowadays, more and more information and communication technologies (ICT) gain the characteristics of groupware as they strive to support different aspects of collaborative work. These types of ICT become progressively intertwined in the infrastructures of companies and therefore their implementation deserves as much attention as their design and development. However, the literature keeps on providing examples of failures of groupware projects. In this paper, we propose a novel theoretical perspective to understand implementation of such technologies based on learning theories. A technology implementation process is regarded as a learning process. The model describes two levels of the implementation process: the user level (individuals and groups) and the organisational level. At the group level, it is based on five steps of collaborative learning within a group of users. At the organisational level, it is related to the learning climate. By means of the longitudinal case study, we have operationalized the constructs from the model towards concrete user-group and managerial activities that advance implementation of groupware. The discussion leads us to conjecture that a better organisational learning climate could promote successful implementation of groupware through group learning. Ultimately, the insights derived from the model should lead to tangible ways to foster the learning climate.
INTRODUCTION

Implementation of technology in an organization can be regarded as a learning process and, in particular, implementation of groupware technology, as a collaborative learning process. In this chapter, we propose a model of learning-oriented implementation of groupware technologies. We believe that the model is useful in several ways. The model provides novel insights, highlighting issues relevant to the human aspects of implementation processes. Moreover, we envisage that it is possible to improve such processes, based on the understanding provided by our model.

With collaborative technologies, we mean computer-based systems that give support for collaborative work. Systems specifically designed to do so are commonly called groupware. But with the rise of Internet technologies on the one hand and integrated office environments on the other hand, the distinction between groupware and other information and communication technology gets blurred. Relevant for our perspective is not whether a system to be implemented classifies as a groupware system, but whether the technology is to be instrumental in supporting collaborative work.

The perspective presented here is a novel one; therefore, it is worthwhile to motivate our view before we present the theoretical framework. Why would we want to consider a collaborative technology implementation process as a collaborative on-the-job learning process?

• User groups adapt a novel way of working when a new technology is introduced. Not all groups do this in the same manner, and this adoption process, called appropriation (DeSanctis & Poole, 1994; Ruel, 2001) depends on the group processes. The terms in which one describes the appropriation process—sharing understanding, mutual adjustment—are closely related to learning theory.

• Changes in technology do not only allow more effective ways of doing the same work, but, in addition, lead to changes in various aspects of professional competency such as knowledge, skills, and attitudes. That, in turn, could influence on-going use of technology. Hence, in theory, there is an on-going evolutionary process of professional and technological development.

• While using collaborative technology in practical situations, user groups gradually discover the affordances provided by the system and come up with new, unforeseen ways of working. We believe that lots could be gained from collaborative technology if users exploit their group learning potential to a large extent.

• In several accounts of case studies, the implementation process did not take place in an optimal way, and the cause of this has been attributed to a lack of reflective restructuring among the users (Tucker et al., 2001; Hettinga et al., 2001).