



Explaining IT Implementation Through Group Learning

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ABSTRACT

Implementation of an information technology (IT) system in an organization takes a certain amount of time. System usage becomes stable when users have appropriated the system and new work practices have been established. We propose a concept of group learning as a framework to highlight relevant aspects of such a process. A longitudinal case study with two opposite research results has provided a preliminary validation of the proposed model. A human resource information system (HRIS) was introduced in a hospital in two different settings. With one user group it was successfully implemented, and it failed in the other group. Analysis of the qualitative data shows a marked difference in the group learning processes between the two groups, which significantly contribute to the differences in success. These results confirm our assumption about the importance of learning processes in groupware implementation.

Keywords: group learning; human resource information system; IT implementation

INTRODUCTION

Introduction of information technology (IT) in an organization is not an instantaneous transition, but a process that takes a certain amount of time. Usually a new system is introduced, the organization gathers experience and the system is fine-tuned according to the arising needs, in one or more cycles (Bardram, 1998; DeSanctis & Poole, 1994; Orlikowski, 1996). That leads to a certain mismatch between the initial ideas of IT and its intention for the indi-

vidual users, and the real use, perceptions and experience. Such a discrepancy becomes deeper when a system is introduced to a group of users and requests the users' collaboration.

Hence, implementation of IT aims at getting the 'consensus' between the goals and functionalities of a system and users' needs and perceptions. In particular, this is the case with the introduction of technologies that are supposed to support interdependent tasks. As indicated by numerous case studies (e.g., Bikson & Eveland, 1996;

Orlikowski 1996), implementation of such systems does not follow a straight path that can be laid out in advance. After a period, in which users “appropriate” the system (DeSanctis et al., 1994), system usage becomes stable when new work practices have been established. By that time, IT may have “drifted” (Ciborra, 1996) from its intended use at the outset of system implementation.

The question arises as to how group interactional processes are related to adopting of IT. Some interactional processes that influence IT adoption are emphasized in the literature: reflective group processes (Tucker, Edmondson, & Spear, 2001; Hettinga, 2002); sharing understanding (Mulder, Swaak, & Kessels, 2002); and collaborative knowledge building (Stahl, 2000).

With the rise of Internet technologies on the one hand and integrated office environments on the other hand, the distinction between collaborative and other information and communication technology gets blurred. Relevant for our perspective is not whether a system to be implemented classifies as a collaborative system, but whether the technology is to be instrumental in supporting collaborative work.

We propose a model of a learning-oriented implementation of IT that focuses on the group interactional process as the core factor in adopting a new system. The model provides novel insights, highlighting issues relevant to the human aspects of implementation processes.

Why would we want to consider a technology implementation process as a learning-oriented process?

User groups adapt a novel way of working when a new system is introduced. Not all groups do this in the same manner, and this adoption process, called appropri-

ation (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 ongoing use of technology. Hence, in theory, there is an ongoing 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 a lot 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 & Schippers, 2001)

In the next section, we present a theoretical framework for IT implementation based on collaborative learning. In the following section, we apply the framework to a longitudinal case study, involving implementation of the same system with two different users groups. The differences in success of the implementation processes can, at least in part, be attributed to the different learning processes involved. Finally, we conclude that the case gives a first validation of the proposed framework.

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