Chapter 3.1
Collaborative Technologies, Applications, and Uses

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INTRODUCTION

Is it still possible to draw up a state of arts about collaborative technologies? For 20 years now, reflections on these technologies have become the subject of a scientific discipline in its own right: *computer supported cooperative work* (CSCW). Since this term was fashioned in 1984 by Irene Greif and Paul M. Cashman, research scientists of extremely diverse disciplinary origins (i.e., ergonomics, psychology, linguistics, sociology, etc.) have invested in research which has been presented in a large number of conferences (the main one being the biannual "CSCW" conference which spawned a "sister" conference in Europe called "ECSCW"), in a specialist magazine (*CSCW*), in dozens of books, and hundreds of articles. CSCW covers a wide range of works whose state of arts begins to be a bit difficult to draw.

In spite of all those works, uses of collaborative technologies continue to be a major issue in developing electronic human resource management (e-HRM). In fact, developing cooperation among employees is often an objective of e-HRM, but, as in other domains of firms, those technologies are generally under-used in comparison with what is waiting before their implementation. In this article, we develop the idea that a better understanding of how we can precisely define "uses" and how they appear—or not—is necessary to understand this phenomenon of under-use.

In the first part of this article, we will precise the main dimensions of the collaborative technologies field. In a second part, we will present the most recent development of this reflection, which can be considered as one major basis for future works in this discipline.

COLLABORATIVE TECHNOLOGIES BACKGROUND

Collaborative technologies have always been developed through a wide association with social science which impacts deeply the way to conceive those technologies and distinguishes this discipline from other disciplines dedicated to computers and conducts to a (too much) wide diversity of technologies and scientific papers.

A Specific Way to Conceive Technologies

Since their inception, collaborative technologies have been considered as being one of the technological innovations which has best managed to associate the social sciences in its development. While in the majority of domains a watertight boundary may be observed between a sociology of the techniques which analyze how a technology is produced and a sociology of uses which studies the social effects of these same technologies, in the collaborative technologies, there is to be found a specific configuration where the sociology of techniques and sociology of uses dialogue one with the other to propose rapid and iterative improvements to software design (Kies, Williges, & Rosson, 1998).

This proximity between the social sciences and the conception of collaborative technologies has had consequences on the way in which these technologies are conceived. Indeed, for all those who work in this field, it would very clearly seem that design and uses are not two instants which succeed each other in the life of a technological innovation but two activities which should interpenetrate so as to produce innovations which respond in the most effective way possible to the real needs of the users (Akrich, 1998). The CSCW has thus more particularly developed the processes of "user-centered design," a "co-design," or a "participative design" where the users are incorporated in the different phases of the design process through the

medium of statistical surveys, descriptions of work situations, videos of users in activity, locations in experimental sites, or even of the deployment in a natural situation (Boullier, 2002). Very numerous methodologies have therefore been mobilized in an attempt to design technologies which incorporate as heavily as possible the real preoccupations of users in the design process.

A Common Attachment to Cooperation…

Besides this permanent concern to put the user in the heart of the design process, the multitude of articles attached to CSCW share a common attachment to the notion of cooperation. It is this which has enabled them to differentiate themselves from the two pre-existing disciplines: the study of information systems on the one hand (*office automation, management information system* or IS) and on the other hand the design applications intended for individual computers (*human computer interaction* or HCI). While the discipline of information systems is working on the design of the "large" systems for firms (company servers, electronic data interchanges [EDI], reservation, command, or transaction software between customer and supplier), the HCI discipline is involved in the design of computer tools which are used to construct a dialogue between an individual and an isolated machine. Compared with these two disciplinary "monsters," the CSCW has made an effort to occupy a domain which both of them perceived badly: the organization of cooperation of small (and medium) groups of people who work in networks or in project groups (Cardon, 1997).

…But a (Too Much) Wide Spectrum of Works

Beyond this common attachment for the instrumentation of cooperation in groups, the growing inflation of articles in this discipline leads to a very wide diversity in the scientific work, the machines,

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