

Chapter 3.5

Success Factors in the Implementation of a Collaborative Technology and Resulting Productivity Improvements in a Small Business: An Exploratory Study

Nory B. Jones

University of Maine, USA

Thomas R. Kochtanek

University of Missouri, USA

ABSTRACT

Practitioners and academics often assume that investments in technology will lead to productivity improvements. While the literature provides many examples of performance improvements resulting from adoption of different technologies, there is little evidence demonstrating specific, generalizable factors that contribute to these improvements. Furthermore, investment in technology does not guarantee effective implementation. This qualitative study examined the relationship between four classes of potential success factors on the adoption of a collaborative technology

and whether they were related to performance improvements in a small service company. Users of a newly adopted collaborative technology were interviewed to explore which factors contributed to their initial adoption and subsequent effective use of this technology. The results show that several factors were strongly related to adoption and effective implementation. The impact on performance improvements was further explored. Results showed a qualitative link to several performance improvements including timesavings and improved decision-making. These results are discussed in terms of generalizability as well as suggestions for future research.

INTRODUCTION

The importance of knowledge sharing and the ability to tap into an organization's vast reservoir of creative intellect have been acknowledged as possibly the greatest strategic competency an organization can achieve (Davenport 1999; Pan et al. 1999). By enabling associates to share their ideas, expertise and wisdom, problems can be more easily solved, processes improved, and productivity increased. As business environments become more turbulent and technologies become increasingly dynamic, the pace of change and competitive pressures spiral more steeply upward. As this paces continues, organizations require technologies, capabilities and a culture that enables them to keep up with these changes (Senge 1997; Rumizen, 1998).

Furthermore, in an era that is becoming predominantly digital, the ability to share knowledge is becoming easier, cheaper and more widely accepted. Many organizations recognize that collaborative technologies, supported by distributed electronic networks, can reduce barriers to communication and facilitate knowledge sharing within the organization (Ciborra et al., 1996). Collaborative technologies can enable people in distributed environments to work together seamlessly irrespective of location, time or functional area. By sharing a common goal in a networked environment, virtual teams can create synergistic relationships and quality output via collaborative knowledge sharing. In addition, the communication patterns that develop in electronic collaborative environments are equally applicable to people sharing knowledge in the same building or even the same room as those who are divided by continents (Barbar et al., 1998).

While causal relationships between knowledge sharing and specific quantifiable performance improvements to achieve competitive advantages have been scarce, researchers have qualitatively documented some organizational performance improvements. For example, the adoption of one

particular collaborative technology (*Lotus Notes*) to facilitate knowledge sharing increased productivity and efficiency in a software company by "creating a knowledge repository which prevented duplication of research efforts" (Orlikowski, 1996). The research literature acknowledges this relationship while seeking to validate it with additional empirical studies. While most research in knowledge management and collaborative technologies has focused on large organizations, few studies have examined its impact on small businesses. In addition, few studies have explored the specific success factors that contribute to the adoption and diffusion of technologies that facilitate knowledge sharing and resulting performance improvements.

This article describes the experiences of a scientific contract research organization that works in the pharmaceutical industry, in their attempt to improve organizational performance by adopting a collaborative technology to facilitate knowledge sharing within the organization. It explores four classes of potential success factors to facilitate this process. The literature on knowledge sharing and collaborative technologies suggests a number of factors considered to be instrumental in achieving successful knowledge information among people in organizations.

In addition, researchers in the field of performance measurement and collaborative technologies have found tentative relationships between performance improvement and knowledge sharing using different collaborative technologies in different contexts. However, organizations often introduce new technologies using a forced adoption approach without fully understanding the specific factors required for their continued and effective use. This represents a prerequisite requirement if the technology is to be used to fulfill the goals for which it was intended.

Therefore, this study explored how and why certain variables contribute or fail to contribute to the effective use of a CSCW (computer-supported collaborative work) system, as well their

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