E-Research Collaboration in Academia and Industry

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ABSTRACT

E-Collaboration has come of age in the last decade, with industry and academia using the latest web-based collaborative software to bring together groups of workers to work on common tasks. Research is a $370 billion industry in the United States and is conducted in every sector of the economy. It has collaboration at its core. Most innovations result from collaborative efforts between groups of workers who are often geographically dispersed. Academic leaders now seek the synergies that result from collaboration between their research faculty and others. Web 2.0-based research portals have emerged that allow knowledge sharing and lowering of social barriers between researchers. Another important development is cloud computing, which has dramatically reduced computing costs for organizations. These tools allow researchers in both industry and academia to extend their range and reach, gain synergies between dispersed groups, and increase research efficiency and effectiveness. This paper examines the use of e-research collaboration tools in industry and academia. It describes a framework that matches an organization's e-research collaboration needs to e-research collaboration solutions across several critical dimensions. The proposed framework will help to improve the understanding of available options for e-collaboration infrastructures, particularly in the sub-area of e-research. It will also help to identify the fit between these infrastructures and organizational e-research collaboration needs.

Keywords: Academic Research, Collaboration, E-Collaboration, E-Research Collaboration, Industry Research, Research

INTRODUCTION

Collaboration is central to accomplishing most organizational tasks. Effectively implemented, it can create synergies between workers and result in increased organizational productivity (Rinaldi, 2009). Poorly implemented, it can lead to decreased productivity and morale, as well as increased conflict between workers (Cohen & Gibson, 2003; Huysman & Wolf, 2006; Mauthner & Doucet, 2008).

In the computer age, e-collaboration has emerged as a natural evolution of collaboration. It enhances and enables collaboration via computers and data communications. However, Kock and Nocek (2005) point out that e-collaboration includes, but is not limited to computer mediated communication (CMC) and computer supported cooperative work (CSCW).

In the Internet age, e-collaboration has gone further in enabling global firms to dynamically organize ad-hoc workgroups with great flexibility using new web-enabled functionality (Munkvold & Zigurs, 2005; Howe, 2006; Turban et al., 2011).

E-Collaboration has a longer history in the corporate world than in academia (Camarinha-Matos & Afsarmanesh, 2005). From the 1980s, e-collaboration suites such as Groupwise, Lotus Notes and Exchange introduced e-collaboration to organizations. The initial leader in the class - Lotus Notes, provided email and calendaring features, but stood out with its document management and threaded discussion features (Robertson et al., 2001).

Today's industry solutions however, are a mix of custom software, enterprise software, and web software based on such e-collaboration suites as Microsoft's SharePoint.

Document management functions allow work processes and documents to be managed, worked on, and transmitted electronically among workers. Discussion threads allow ongoing discussions between workers to take place online and be stored for later access (Gasson et al., 2006).

Later on, Lotus Notes introduced web browsing, blogs, wikis and contemporary Web 2.0 features. Also included were tools such as form design apps that enabled workers to create and distribute forms.

In academia, e-collaboration is a more recent phenomenon. Teaching and research for faculty members have tended to be solitary pursuits. Individual researchers typically work in isolation or with a few departmental colleagues to teach, publish research articles and/or seek grant funding (Lee & Bozeman, 2005; Anandarajan & Arinze, 2010).

On the administrative side, general e-collaboration tools such as Lotus Notes have also been used widely in academia, together with vertical academic management software, such as Banner and BBVista. Banner for example, manages functions such as academic HR, finance, document management and data warehousing, among others. BBVista on the other hand, exemplifies e-collaboration software for teaching.

Through the World Wide Web (WWW) and in particular, Web 2.0 tools, the nature of e-collaboration has been transformed. Web 2.0 tools such as Wikis, instant messaging, forums, web-based project and document management have enabled more productive collaborations that overcome geographical, time zone and social barriers (Zaman, 2010; Turban et al., 2011).

Collaborative activity is increasing in importance in both industry and academia, and *between* industry and academia (Engelking, 1992). This paper examines e-research collaboration in both sectors to better understand how e-research collaboration is evolving and the implications for other areas of e-collaboration.

The paper describes e-collaboration in industry and academia. It then examines e-research collaboration in both areas and critical dimensions for e-research collaboration. It proposes a framework to match organizational e-collaboration needs to appropriate IT infrastructures and illustrates the framework's use via an example. The paper concludes with suggestions for future research.

E-COLLABORATION IN INDUSTRY

E-collaboration has deep roots in industry, with corporations deploying proprietary internal collaborative software as well as industry-standard software such as Lotus Notes and Exchange over the years.

Initially, the motivation for these deployments was to streamline and improve existing paper-based workflows by making them electronic. Thus, Local Area Networks (LANs) replaced inter-office mail and email substituted for letters. Rosenzweig (2009) identified improvements in operational and business performance as major drivers for mass deployments of e-collaboration software.

In business organizations, e-collaboration is used across all types of activities, ranging from the operational to the strategic, and across all functional areas. Given that collaboration is intrinsic to such a wide sweep of activity, applications such as supply chain management (SCM) systems, Enterprise Resource Planning (ERP) systems, Customer Relationship Man-

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