

Chapter 14

Collaboration between Academia and Industry: A Change in Approach

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ABSTRACT

In industry, up to 40% of an IS budget can be spent on Storage technology, making it the fastest growing segment of IT/IS. While industry has recognised the need to diffuse this technology, academia has been slow to respond to this diffusion need. Universities are not teaching courses in this area and a variety of reasons are presented ranging from lack of skills, to bureaucratic delays, to cost (the cost of installing a Storage system for use by students is a massive expenditure well beyond the budgets of most IS academic departments). This chapter concentrates on the lack of skills (knowledge barriers in the parlance of diffusion of innovation theory) and examines ways to overcome this. The knowledge skills are present in industry, so collaboration between industry and academia is a suggested solution. Collaboration between industry and academia, though, is fraught with problems. The aim of this research therefore is to examine how this collaboration can be effective. Interestingly, the result of this research suggests true collaboration is not the solution, but a win-win situation is still possible for all stakeholders.

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INTRODUCTION

Enterprise systems are focal points for business and information technology, and storage technologies are becoming a core element of these systems. To meet growing storage needs, industry has introduced a selection of storage solution alternatives, each addressing specific data storage and management needs (Duplessie, 2006). Direct attached storage (DAS) systems attach storage drives directly to servers, network attached storage (NAS) environments are made up of specialized servers dedicated to storage, storage area networks (SANs) are highly scalable and allow hosts to implement their own storage file systems, and content addressable storage (CAS) systems are a mechanism for storing and retrieving information based on content rather than location. Because the storage needs of all organizations are growing exponentially today, huge investments are made each year in storage-related hardware and software. Skilled employees are needed to design and navigate through these complex enterprise solutions.

Business' information technology budgets are responding to storage demands, spending an estimated 40% on storage-related needs in large organizations (Hecker, 2004). IDC predicted that IT spending on storage and services will exceed \$60 billion in 2007 (Gantz, 2007). Increased spending on storage makes it the fastest growing segment of IT. Despite these large investments in Storage by industry, Universities lag behind significantly with respect to curricula related to this expanding area.

THE ROLE OF UNIVERSITIES IN THE DIFFUSION OF STORAGE TECHNOLOGIES

While the need for storage technology is evident, there are issues with its implementation. Problems seen with the introduction of a new technology

can often be explained by the diffusion of innovation theory, described in Rogers (1962), and the variations of this theory by authors such as Fichman and Kemerer (1999). Although storage technology is being adopted, and has been for several years, there are still issues that need to be addressed. Fichman and Kemerer (1999) describe the assimilation gap between acquisition and deployment, referring to the illusory diffusion of innovation. Technologies used in Information Systems demonstrate assimilation gaps for two primary reasons: increasing returns and knowledge barriers. Fichman and Kemerer concentrate on increasing returns, which describe the difference between the performance of an average adopter and the potential performance of a larger user base. Fichman and Kemerer (1999, p.8) accept that there are other potential factors, which they list as: structural; managerial; political; and social. They concentrate on increasing returns and knowledge barriers as they are not attempting to explain the assimilation gap for an individual instance but explain why some instances demonstrate this gap and why the gap differs across technologies. A possible explanation offered by Fichman and Kemerer is the problem of knowledge barriers. The adoption of innovations can be hindered by the learning required to successfully deploy the technology (or methodology): Orlikowski (1993) demonstrates how this can occur in the adoption of CASE tools, while McAvoy and Butler (2007) do so for the adoption of a software development methodology.

Knowledge barriers are apparent in the Storage technology domain. A survey in Trewyn (2006) predicts skills shortages in technology roles and Universities are finding it difficult to provide graduates with the required skills. Similarly, Van Sickle, Cameron, Groom, Mallach, Dunn, Rollins and Rook (2007) stated that, since 2004, EMC has hired over 1,500 new employees, with over 90% being new CS or IS graduates. During the hiring process, it was noted that very few students had any knowledge of storage technologies, let

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