Managing SaaS Risk in Higher Education Organisations:
A Case Study

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ABSTRACT

Software-as-a-Service (SaaS) is a new information and communications technology (ICT) that offers dynamically scalable reconfigurable services to clients on demand via the internet. It is heralded as one of the most significant ICT advances that can facilitate business value creation and innovation. There is paucity of research concerning the perceived risks that can affect SaaS adoption intentions of higher education organisations (HEOs). In attempts to contribute to the existing body of knowledge, this study draws on qualitative evidence to explore perceived SaaS risks at HEOs. It equips HEO managers and policy makers with an integrative risk management framework for SaaS adoption.

Keywords: Adoption, Higher Education, Information and Communication Technology (ICT), Risk, Software-as-a-Service (SaaS)

INTRODUCTION

Software-as-a-service (SaaS) is an arrangement that enables the convenient provisioning of configurable software applications on-demand across numerous host computers that are connected via a network (Mell & Grance, 2010; Svantesson & Clarke, 2010). The software applications are controlled by providers or vendors which consumers can access remotely through thin client interfaces (e.g. web-browsers via the internet) in return for payment of usage fees or even free-of-charge (Gupta & Herath, 2005; Heart, 2010). Popular examples include web-based mail (e.g. GMail and Yahoo Mail) and file sharing applications (e.g. Google Docs and filesAnywhere.com).

SaaS has the potential to transform the ICT industry in many ways including changing the way in which software are designed and used resulting in significant business value generation and innovation (Armbrust et al., 2010;
Specifically, SaaS is expected to result in fundamental organisational impacts in the form of significant efficiency improvements, cost reduction, increased flexibility, and shorter time-to-market, and overall national macroeconomic performance impacts in the form of growth, competition and business creation (Dutta & Mia, 2011; Etro, 2010). Consequently, SaaS is poised for strong growth into the future. For example, Gartner predicts that by 2013 the global SaaS market is forecast to have a 17.7% compound annual growth or reach USD14 billion (Mertz et al., 2009), and that by 2012 at least a third of business software spending will be on SaaS applications (Plummer et al., 2008).

With these growth trends, there are growing calls in the literature for further research concerning SaaS. Whilst existing analyses have been undertaken from the service providers’ perspective, there is need for further research that focuses on the organisational adopters’ perspective (Behrend et al., 2011; Carr, 2005; Clarke, 2010; Haselmann & Vossen, 2011; Jaeger, Lin & Grimes, 2008; Marston et al., 2011; Svantesson & Clarke, 2010). However, there is a wide range of different organisations operating in different industries (e.g. business and management, finance, manufacturing, education, oil and gas, government, healthcare, telecommunications) that are currently contemplating to adopt SaaS with the hope of taking advantage of its espoused value propositions (Ercan, 2010). Given the idiosyncrasies of these prospective adopters (Ercan, 2010), in this paper, we focus on higher education organisations (HEOs) (e.g. universities).

We argue that HEOs are interesting for many reasons. First, as the sector grows, HEOs are increasingly relying on larger numbers of applications (e.g. e-learning and scientific computing) to support teaching and research roles which has resulted in significant cost increases (Liao, 2009; Sheng, Ren, & Wang, 2011; Sun et al., 2007; Xu, Li, & Zhao, 2011; Yang, Zhu, & Zhou, 2011). Second, there is growing evidence that HEOs are facing increasingly tighter public funding constraints (Hyland, Marceau, & Sloan, 2006; Mehta, 2004). Third, Xu et al. (2011) argue that the scale and scope of usage of teaching and research applications at HEOs can change “unceasingly” (p. 114) as needs for these applications change (e.g. teaching period versus non-teaching periods). Also, driven by relatively short and frequent hardware upgrade cycles, teaching and research applications may also need to be updated frequently (Yang, Zhu, & Zhou, 2011). These frequent changes can make traditional software provisioning costly at HEOs, and potentially result in waste of valuable resources, particularly when licensing agreements are inflexible. With these increasing pressures on their cost structures, HEOs are focusing on the delivery of the core competencies of teaching and research whilst looking for innovative cost-effective ways to handle supporting non-core activities, including ICT generally, and software provisioning in particular.

There is agreement in the literature that SaaS can be a cost-effective means for HEOs to achieve these aims by helping them control ever-growing software requirements and costs, thereby, assisting HEOs to optimise their utilisation (Behrend et al., 2011; Ercan, 2010; Erkoç & Kert, 2011; Sasikala & Prema, 2010; Sun et al., 2007). For example, SaaS can assist HEOs in replacing software applications traditionally installed on campus computers with applications delivered via the internet, resulting in reduced costs and complexity whilst also eliminating time- and location-related constraints for students and academics and making access to learning and research applications cost-effective, equitable, and encompassing (Behrend et al., 2011; Ercan, 2010; Erkoç & Kert, 2011; Sasikala & Prema, 2010). Whilst SaaS does not necessarily eliminate the need for computer hardware at HEOs, it can reduce costs as older hardware can continue to remain useful for longer whilst software installation and error fixing tasks are carried out centrally by SaaS providers, thereby, potentially extending the useful life of existing ICT resources at HEOs (Behrend et al., 2011; Erenben, 2009). SaaS can also enable HEOs to offer e-learning or distance education courses to
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