Addressing Sustainability in IT-Governance Frameworks

Lubomira Stantcheva, PRESIDIO Group, Berlin, Germany
Vladimir Stantchev, SRH Hochschule Berlin, Berlin, Germany

ABSTRACT

In this paper, the authors analyze approaches for addressing sustainability in established IT-Governance frameworks. Such frameworks are considered to be a powerful tool for ensuring compliance and proper IT operation in modern organizations. The authors assume that – in the context of the seismic changes in IT provisioning and usage that current trends such as Cloud Computing and Hybrid Computing are causing – there are potentials in them to improve sustainability of organizations’ operations at both IT and business level too. The analysis is conducted in a holistic way, taking into account organizational and process aspects, sustainability of resource usage, IT-related aspects, as well as incorporating the view of the overall IT-Governance. The presented case study within a mid-sized German enterprise provides a corroboration of the proposed approach by measures for both its feasibility and effectiveness.

Keywords: Cloud Computing (CC), Framework, Germany, Internet, IT Governance

1. INTRODUCTION

Cloud computing (CC) is often regarded as a paradigm change in the evolution of IT. In an era of ubiquitous broadband, CC responds to the needs of the mobile workforce of today by bringing collaboration to a whole new dimension (Brender & Markov, 2013) thus enabling novel and more-sustainable usage scenarios. CC refers to both the applications delivered as services over the Internet and the hardware and systems software in the data centers that provide those services (Armbrust et al., 2010). Most actors in the IT sector including providers of access devices, providers of infrastructure, application and content services and providers of network connectivity are affected by the unfolding cloud computing paradigm (Khanagha, Volberda, Sidhu, & Oshri, 2013). The network-centric model of computing presumes that all data, applications, and services are hosted on the network and thus represents a significant departure from the traditional client-centric model of personal computing, where data and software resources are hosted on a local computer, or the client-server model of organizational computing, where resources are hosted on organizational servers (Bhattacharjee & Park, 2013). This makes CC attractive to business owners as it eliminates the requirement for

DOI: 10.4018/ijhcitp.2014100105
them to plan ahead for provisioning, and allows enterprises to start from the small and increase (or decrease) resources flexibly in response to current service demand (Zhang, Cheng, & Boutaba, 2010). CC is also an attractive way to evolve traditional on premise applications (Colomo-Palacios, Fernandes, Sabbagh & de Amescua-Seco, 2012). On the other side, users are often compelled to use cloud services instead of organization-mandated on-site applications (Stantchev, Colomo-Palacios, Soto-Acosta, & Misra, 2014) which is only one example of the challenges associated with CC (Wei & Blake, 2010). Despite these challenges, CC technologies have recently gained momentum and moved within less than 5 years from a hyped trend to a mature set of technological innovations providing infrastructures for business and also for public administration (Krolczyk, Stantchev, & Senf, 2009) while providing substantial sustainability benefits (Baliga, Ayre, Hinton, & Tucker, 2011; Berl et al., 2010). However, CC research is still in its early days (Zhang et al., 2010) and more studies on its sustainability aspects are needed.

Following this path, the paper presents an analysis of possible extensions of established IT-Governance frameworks to include sustainability-related aspects with respect to CC. The aim is to allow incorporation of sustainability-related objectives in already widely used approaches for IT management in order to accelerate the adoption of more sustainable procedures in IT. The focus of the proposed extensions is to provide high-level guidance for decision makers about how to structure the IT activities on the one side and how to select CC providers based on sustainability criteria on the other.

The remainder of the paper is structured as follows. Section 2 presents the most important insights on IT Governance frameworks and their implications for organizations, employees and users. Section 3 reviews concepts and efforts regarding extending these frameworks to incorporate CC-specific topics. Section 4 presents the proposed extensions. Section 5 depicts a case study application of the proposed approach. Finally, conclusions are drawn in section 6.

2. ASPECTS OF IT GOVERNANCE

One major aspect of governance in the context of IT is the development and facilitation of IT governance frameworks. The objective is to define standardized processes and control metrics for IT provision (Stantchev & Stantcheva, 2012) and to offer approaches for the application of these artefacts in real world organizations (Stantchev & Stantcheva, 2013). Commonly used frameworks area include the IT Infrastructure Library (ITIL) (Van Bon, 2008) and the Control Objectives for Information and Related Technology (COBIT) (Lawton, 2007). Furthermore, in the German tradition of information systems research IT Controlling is considered a major aspect of the governance of IT (Kütz, 2005). The particular focus there lies in topics such as IT cost accounting and target costing.

As already mentioned, the Information Technology Infrastructure Library (ITIL) is the framework that most IT service providers base their service process landscapes on, making it “the most widely accepted approach to IT service management (ITSM)” (Van Bon, 2008). The release of version 3 of ITIL (V3) in May 2007 and its quite different approach to IT services over the previous version 2 (V2), attempts to resolve two known problems of ITIL V2:

1. ITIL V2’s unspecific nature required a creative design of service processes that were not defined by ITIL, but merely based on it.
2. ITIL V2 did not present a complete view of all the processes required by ITSM, one example being the absence of a service life-cycle (Stantchev & Goernitz, 2011).

In (Stantchev & Goernitz, 2011) authors suggested the adoption of ITIL V3 as the most
Related Content

Knowledge Base Development in Virtual Enterprise Network as Support for Workplace Risk Assessment
[www.igi-global.com/article/knowledge-base-development-virtual-enterprise/55990?camid=4v1a](www.igi-global.com/article/knowledge-base-development-virtual-enterprise/55990?camid=4v1a)

RSS-Based Learning Using Audio
Víctor Manuel Álvarez García, María del Puerto Paule Ruiz, Remko van Dort and Juan Ramón Pérez Pérez (2010). *International Journal of Human Capital and Information Technology Professionals* (pp. 76-87).
[www.igi-global.com/article/rss-based-learning-using-audio/48208?camid=4v1a](www.igi-global.com/article/rss-based-learning-using-audio/48208?camid=4v1a)

Engaging the Students in Activity Based Learning for Future Employability
[www.igi-global.com/article/engaging-students-activity-based-learning/60526?camid=4v1a](www.igi-global.com/article/engaging-students-activity-based-learning/60526?camid=4v1a)
How Is the Personality of Facebook Customers?: Cloninger's Psychobiological Model of Temperament as a Predictor of SNSs
www.igi-global.com/chapter/how-is-the-personality-of-facebook-customers/170266?camid=4v1a