Chapter 5.12
Cultural Differences in Managing Cloud Computing Service Level Agreements

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ABSTRACT

Software as a service and cloud computing are new buzzwords in the Internet-based economy. Their idea is to provide software, computing and storage capacity in large, but yet unknown numbers. The legal basis of offering such services is provided by service level agreements (SLAs). In a global economy, these SLAs are often made between companies based in different countries, thus between individuals with different cultural backgrounds. This study explains to what extent, how and why the management of SLAs may differ due to cultural differences among participants. Starting from Hofstede's seminal work, expert interviews show that some of his findings still hold in the cloud computing world, while others have to be revised.

INTRODUCTION

With the ongoing evolution of the Internet and the steady increase of computational power, information technology (IT) and its importance have risen dramatically within the last decades. This changed the business world (Weiss, 2007), and in addition leads to a discussion whether, how and why this technological development has an impact on social phenomena, especially culture (Held, 2004). Several books and articles have been published predicting a steady globalisation of culture (Bolton, 1995). However, some authors argue that despite this increase of IT and the resulting coalescence of the world, the assumption that cultural borders are dissolving is wrong. On the

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contrary, they claim cultural aspects to become even more important with respect to IT and its usage (Lash & Lury, 2007).

Following on this discussion, this book chapter presents the outcome of an empirical qualitative survey, which investigates the cultural differences in IT. We concentrate on one specific area of application that is not only of a high relevance with regard to future IT trends, but in addition exhibits a high degree of standardization coupled with an enormous potential for cultural adaptations: service level agreements (SLAs) for IT services in the context of cloud computing.

The term "cloud" can be seen as a high-level metaphor for the Internet and an abstraction for the complex technical infrastructure it conceals. It is a style of computing in which IT-related capabilities are provided "as a service", allowing users to access technology-enabled services from the Internet ("in the cloud") without knowledge of, expertise in, or control over the technology infrastructure that supports them (Eymann, 2008). The "services" that can be accessed thereby reach from mere infrastructural components like CPU or disk space (Infrastructure as a service – IaaS) over software applications (Software as a Service – SaaS) to whole platforms or portals (Platform as a Service – PaaS)[1]. This shows the broadness and potential of the cloud computing concept that has been identified be large IT companies such as Google, IBM, or Amazon for example, who are driving forces in the cloud context. One of the most cited definitions of cloud computing was proposed by Buyya et al. who explain the term as follows:

A Cloud is a type of parallel and distributed system consisting of a collection of interconnected and virtualised computers that are dynamically provisioned and presented as one or more unified computing resources based on service-level agreements established through negotiation between the service provider and consumers. (Buyya, Yeo, & Venugopal, 2008, p. 2)

Thus, in addition to the existing technological basis and in order for cloud computing to be relevant, a common communicational and contractual basis needs to be ensured. This is done with service level agreements (SLAs) that are a technologically standardized analogy of a service contract, where the level of service is formally defined. SLAs enable providers to specify their service offers formally, which generates planning reliability for all transaction participants. A cloud computing SLA can for example contain a specified level of service, support options, enforcement or penalty provisions for services not provided, a guaranteed level of system performance relating to downtime or uptime, a specified level of customer support as well as information on what software or hardware will be provided and for what fee (Ludwig, 2003). A SLA is defined as follows:

A service level agreement is an agreement regarding the guarantees of a web service. It defines mutual understandings and expectations of a service between the service provider and service consumers. The service guarantees are about what transactions need to be executed and how well they should be executed. (Jin, Vijay, & Sahai, 2002, p. 3)

Although being highly standardized technologically, SLAs nevertheless exhibit significant cultural-dependent differences in their application and are consequently an interesting object for investigation. For our study, the work of Hofstede (2002) serves as the main theoretical fundament and the starting point for our investigations. Hofstede conducted a comprehensive study of how values in the workplace are influenced by culture and analyzed a large data base of employee values scores collected by IBM between 1967 and 1973 covering more than 70 countries. As a result of this study he identified five cultural dimensions to assist in differentiating culture: Power Distance, Individualism, Masculinity, Long-Term Orientation and Uncertainty Avoidance. These