

Opening the Door to Innovation in Cloud Computing

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Abstract

This paper describes research-in-progress that explores the applicability and implications of cloud computing in the creation of business value through open innovation. Both the cloud computing and open innovation paradigms represent recent phenomenon and as such many unanswered questions still persist. In responding to this research gap we propose a new value creation framework which is based on a review of the literature on cloud computing, innovation, open innovation and value. Taking the framework layer by layer, this research in progress shall evaluate the innovation potential across components capable of offering value to organisations. The main contribution of this paper lies in proposing a framework that seeks to identify best route(s) to value, thus providing a visual mapping to enable organisations determine which cloud computing components, implementations, solutions and innovation approach is most suitable for value attainment.

Keywords: Cloud computing, Innovation, Open Innovation, Value

1 Introduction

While some research has been carried out in order to determine how organisations can reap the benefits associated with cloud computing e.g. (Armbrust et al., 2010; Brynjolfsson, Hofmann, & Jordan, 2010; Buyya, Yeo, Venugopal, Broberg, & Brandic, 2009; Weinhardt et al., 2009), there is no empirical study which has examined how the principles of open innovation could complement a cloud computing approach for the creation of value. Nor has research looked at how individual components of the cloud computing model layers are more conducive than others for the attainment of value. Thus it is the objective of this study to explore the notion of cloud computing, its applicability, implications in a multiple partnering project ecosystem in order to identify key cloud centric enablers of value and ascertain the model of innovation utilised in the process.

2 The Conceptual Framework

For our theoretical base, we propose a layered 5-4-3-2-1 framework model. The Mell and Grance (2010) definition of cloud computing is specific in delineating the cloud as comprising five essential characteristics, four deployment models, and three service models. It is this definition and delineation that we employ in this paper, in particular, what we term the 5-4-3 cloud computing stack model layers comprising *the essential characteristics layer*, *the deployment model layer* and *the service model layer* (Clohessy & Acton, 2013). To capture the concepts of open and closed innovation, we consider an *innovation layer* composed of two innovation sub-layers, open and closed. However, we propose that there are more pathways to value creation through openness in innovation in contrast to a closed innovation approach. As a consequence, the open innovation layer is awarded a more prominent visual sizing in our framework model. The framework model (see figure 1) depicts a potential pathway to value. The model provides a useful lens with which to identify key cloud-centric enablers of business value and the method of innovation utilised in the process of its attainment. Taking the framework layer by layer, this research in progress shall delineate the innovation potential across components.

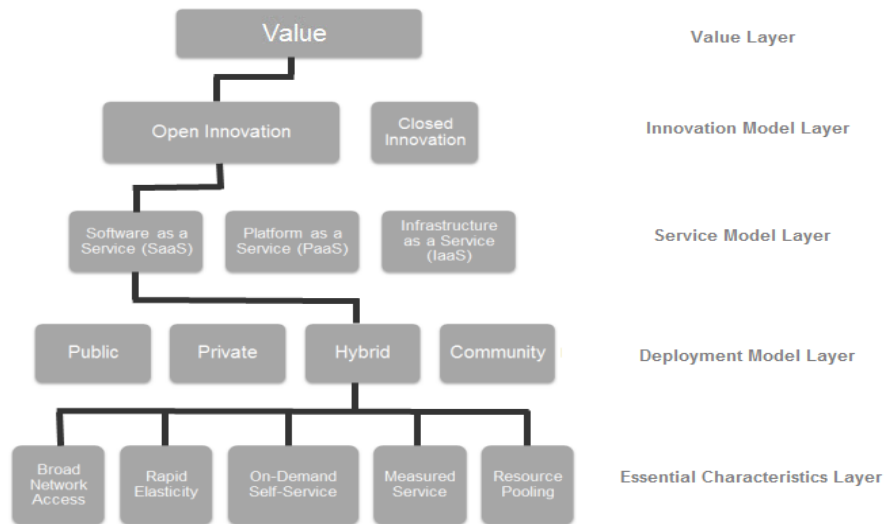


Figure 1: Framework Model (the 5-4-3-2-1 representing the number of elements at each layer)

3 Case

The initial case is a multinational information technology corporation who provide technology and software solutions to consumers and enterprises. The corporation also provide a cloud partner ecosystem which permits their partnering organisations to enhance their own cloud offerings in an attempt to attract new customers and gain entry into new markets. The cloud partner ecosystem consists of a set of tools, documentation, support and best practices provided by the case corporation. In this study we propose to analyse five partnership projects within the case corporation. The profiles of the five projects shall differ in terms of the service model and deployment model utilised.

4 Future Steps

This paper outlined research in progress aimed at exploring the applicability and validity of utilising cloud computing as a means of attaining value through open innovation in a multiple-project environment. Each project will be examined in the context of the cloud computing innovation framework. The study will provide insight into the innovation value of discrete components of the conceptual framework that facilitate the creation of an innovation pathway through the model, a ‘visual map’, that an organisation may traverse in order to facilitate the attainment of value.

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