Exploring Behaviors and Perceptions Affecting the Adoption of Cloud Computing

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ABSTRACT

Cloud computing is a technological innovation that has been marketed to consumers as a revolution in the way people store and communicate data information. This paper extends previous research on technology adoption behavior of individuals by focusing on the role of e-business entrepreneurs in facilitating cloud computing services. As there are a number of technology adoption theories that can explain the process, this paper reviews the major innovation theories but focuses on social cognitive theory for its theoretical framework. Social cognitive theory is identified in this paper as being the most appropriate theoretical lens to understand e-business entrepreneurship as it focuses on social learning, which is an important determinant of a person adopting cloud computing services. A theoretical framework is developed based on social cognitive theory, which focuses on the role of mobile marketing, a person’s emotions and belief system on their intention to adopt cloud computing services. The findings from this paper may help to bridge the gap between practical usages of new technological innovations like cloud computing services with the impact of e-business strategies on a person’s behavior. This paper also has a number of managerial implications for technology marketers of cloud computing services that highlight the importance of facilitating e-business entrepreneurs to further develop mobile technological innovations.

Keywords: Belief System, Cloud Computing, E-Business, Emotions, Entrepreneurship, Social Cognitive Theory, Technology Innovation

INTRODUCTION

Cloud computing is currently transforming information systems by replacing hardware operating systems with on-demand and storage infrastructure (Ojala & Tyrvainen, 2011). Understanding the adoption of technological innovations including e-business applications is one of the most important concerns of technology marketers (Voola, Casimir, Carlson, & Agnihotri, 2012). The current technological landscape enables cloud computing services to bridge the gap between social, policy and business discussion (Bertot, Jaeger, Munson, & Glaisyer, 2010). Part of this infrastructure of cloud computing services is conducted as Software as Service applications in which a

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provider takes care of the underlying information systems network (Kuo, Yu, Chen, & Wei, 2012). This form of outsourcing information management activities related to maintaining information systems involves the operation of a service business (Armbrust, 2010).

Cloud computing offers a number of benefits over traditional computer storage systems including reduced costs, more flexible pricing of software licensees and increased data storage capacity (Ojala & Tyrvainen, 2011). However, there are a number of risks involved with cloud computing including unavailability of service due to connection problems, data confidentiality and information lock in (Armbrust et al., 2010). Ojala and Tyrvainen (2011: 40) defines cloud computing as “software applications delivered through the internet, and also the hardware and system software that is used within data centers to provide these services” and this definition is adopted in this paper. Within cloud computing technology software is available through the internet as a service that enables users the memory capacity and technical capability, which will grow in the future as more enterprises around the world use cloud computing service applications as a way to deliver computing services.

The advent of e-business technologies has meant that technology is a key part of a firm’s strategy, which depends on the adoption of new technologies in a timely and strategic manner (Lee & Grewal, 2004). E-business entrepreneurs allocate resources to build firm capabilities that deliver superior value to customers (Sirmon, Hitt, Ireland, & Gilbert, 2011). Value can be in the form of market-based performance (e.g. market share, customer satisfaction, customer retention) or financial-based performance (e.g. return on investment, profit, share price) (Sarkees, 2011; Voola et al., 2012). In addition, e-business entrepreneurs actively engage in scanning the market for technology discoveries that change current business practices. This market scanning can involve looking at signal, trends and other indicators that highlight changes in the environment that may offer advantages to the firm’s performance (Voola et al., 2012).

Previous research indicates that there is a positive relationship between the rate of adoption of e-business technologies and a firm’s capabilities (e.g. Augusto & Coelho, 2009; Hult et al., 2004; Naidoo, 2010; Rapp et al., 2008; Voola et al., 2012). E-business is defined in various ways and images but no universal definition exists. In this paper, e-business is conceptualized as including internal administration, communication and procurement that is conducted in an electronic format (Voola et al., 2012). More specifically e-business is the electronic transmission of business exchange to buy or sell products or services from one location to another. This paper contributes to the technology innovation literature specifically by focusing on the complementary nature of cloud computing services and its effects on the adoption of technological innovation by e-business entrepreneurs. Entrepreneurs play an important role in the economic recovery of a region through their ability to be flexible and innovative in creating new jobs, services and industries. Moreover, e-business entrepreneurs have unique characteristics that enable them to be creative and productive whilst using cloud computing services.

Cloud computing services enable entrepreneurs to engage in business endeavors and conduct business collaborations (Kuo et al., 2012). Entrepreneurs can combine cloud computing technology with face-to-face interaction in order to facilitate business performance (Dixon, 2000). Cloud computing is part of e-business strategy as it enables businesses to digitally transmit and store information. E-business entrepreneurs play a crucial role in the operation of cloud computing services by selling products or services over the internet. E-business entrepreneurs exploit resources internal and external to a firm by providing the firm with a source of competitive advantage.

Cloud computing technologies utilized by e-business provides a pivotal role in ensuring a firm’s survival by aiding customer engagement. Cloud computing provides a source of technology marketing as it enables business and
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