



Evaluating the Firm's Performance through the Alignment of Business and Cloud Computing

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Abstract

Strategic Business-IT alignment is gaining popularity among researchers and practitioners because of its potential impact on organizational performance. Currently, large numbers of enterprises are moving to cloud computing as they do not want to implement significant parts of their information systems (IS) in-house. The objective of this study is to analyze the firm performance concerning the processes and operations supported by cloud computing through its alignment to the business. Therefore, this study used the Strategic Alignment Maturity (SAM) model as a framework to validate the evolution of IT-business alignment in a cloud computing environment. A questionnaire-based survey method was employed for data collection. The respondents are IT and business executives of cloud computing adopter firms of India. Structural equation modeling technique is used to statistically validate the model. From the results, it is found that all the constructs contribute significantly to business alignment with cloud computing except partnering and skill maturity. The contribution of this study is the application of the SAM model as a tool to leverage the alignment of cloud computing with business effectively. IT Consultants can make use of this study to help a client in strategic alignment with cloud computing and its subsequent consequences.

Keywords: Cloud Computing; SAM Framework; Firm's Performance; CCT-Business Alignment, and Structural Equation Modeling

1. Introduction

Luftman (1999) established a maturity assessment model, grounded on the six elements of Business and IT-Alignment, which can be documented in the model of Henderson and Venkatraman. This model can provide the organization with a roadmap that identifies opportunities for enhancing the harmonious relationship of business and IT (Luftman, 1999). The model comprises of six alignment dimensions. Each area has multiple characteristics and should be given attention to established the alignment between business and IT. These dimensions are IT-Business communications, the use of value analytics approaches to collaborative governance, nature of the affiliation/partnership, the scope of IT initiatives, and the development of IT skills.

Cloud computing technology (CCT) is emerging as a new business pattern with the expansion of IT and enterprise applications. Currently, large numbers of enterprises are moving to cloud computing as they want to reduce their costs related to IT infrastructure. Cloud adoption takes place only when a sound IT strategy is formulated and aligns with the business goals of an organization. Enterprises have to concurrently use software services provided by different cloud providers together with their in-house IS.

Successful implementation of cloud computing depends on managing IT-related capabilities that leverage the business intelligence and technical skills effectively to achieve organizational goals. Cloud computing modifies the means of using IT in the firm. The firm can utilize IT as a service from an external service provider instead of developing its own IT infrastructure on-premise. This novel way of IT consumption influences the alignment between the IT department and business units of the firm. Hence, in this study, the influence of the strategic alignment of cloud computing with the business on firm performance is analyzed.

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Cloud infrastructure should be aligned with the long-term goals of the business to succeed in terms of optimal utilization of resources and fulfillment of IT strategy. Therefore, there is a need to evaluate firm performance through CCT-business alignment. This study used the SAM model as a framework to validate the evolution of CCT-business alignment. The objective of this study is to revisit the impact of business-IT alignment (BIA) on the firm's performance in a cloud computing platform.

2. Literature Review

The first dimension of the SAM model is communications, which represent the interchange of knowledge, information, and ideas between business and IT to fulfill the objectives of an organization. According to Luftman (1999), effective communication leads to the trusting relationship between IT and business executives and facilitates the collaborative usage of resources at the optimum level. Senarathna et al. (2018) highlighted that awareness related to cloud migration benefits and risks can influence its alignment to the business. Therefore, it is posited that communication maturity has a positive impact on CCT-business alignment.

H1a: Communication maturity has a positive impact on CCT-Business Alignment

Value analytics refers to the potential use of key performance measures of business to determine the value of IT in terms of its contribution to the business (Luftman et al., 2017). This requires the collaboration of IT and business managers on an assessment of the project portfolio of a firm. Cloud computing gives implausible benefits starting from the reduced cost of better user experience, which can be realized through improved efficiency, rationalized system upgrades, reduced time for system deployment and configuration, flexibility, and control on utilization of IT resources (Gupta et al., 2013). Senarathna et al. (2018) suggested that the value of cloud computing is influenced by its relative advantages such as increasing profits, reducing costs, and creating business opportunities. Given these discussions, it is hypothesized that value analytics have a positive impact on CCT-business alignment.

H1b: Value analytics have a positive impact on CCT-Business Alignment.

IT Governance refers to how well a firm connects its business strategy to IT priorities, technical planning, and budgeting. Governance related activities include steering committees, IT-business liaisons, resource allocation, and budgeting. These activities help in making informed IT investment decisions by defining the role of IT in achieving business vision and strategies. Cloud computing offers not only opportunities for the firms, but also risks like Information security threats. Thus, IT governance must be applied to the cloud to manage the risks related to cloud computing information security (Faizi and Rahman, 2019). Given the above discussions, it is hypothesized that IT governance has a positive impact on CCT-business alignment.

H1c: IT governance has a positive impact on CCT-Business Alignment.

Partnering refers to the degree to which the business and IT department establish a relationship based on mutual trust and sharing of risks and rewards. It helps to achieve alignment with cross-functional teams. In a cloud computing environment, IT must perform as a true partner to the business, not like a backend function that just distributes technology services. For that, IT must understand the business language and overall business strategy and objectives of the firm (Ricci and Dailey, 2017). Given the above discussion, it is hypothesized that partnering has a positive impact on CCT-business alignment.

H1d: Partnering has a positive impact on CCT-Business Alignment.

Dynamic IT scope is the extent to which the technology has evolved to help the business to grow, compete, and profitable. Organizations can reduce their IT capital expenditures, as well as operating and maintenance costs with the help of cloud computing and focus toward their core business activities. Hence, organizations integrate cloud computing into their IT-related strategy to achieve competitive advantage (Garrison et al., 2015). Based on these discussions, it is hypothesized that dynamic IT scope has a positive impact on CCT-business alignment.

H1e: Dynamic IT scope has a positive impact on CCT-Business Alignment.

Skills maturity refers to how well IT staff can understand business processes and express the business language. It also refers to how well the corporate staff can understand the major concepts of the technology. It can measure the organizational learning capability and ability to implement and utilize innovation to the optimum level. Cloud initiative should be led by CIO, CTO, or the chief communications officer of the firm.

These executives must have business acumen and understand the language of the C-suite and IT. These business and IT skills of the project leader help in the alignment of cloud-business strategy. Given the above discussion, it is hypothesized that skill maturity has a positive impact on CCT-business alignment.

H1f: Skills maturity has a positive impact on CCT-Business Alignment.

Firm performance can be reflected through financial performance, which is a measure of how efficiently a firm uses its resources to produce profits. Porter (1985) highlighted that strategically aligned IT investments positively influence a firm's key performance indicators. Kathuria et al. (2018) also reported that cloud computing alignment with business processes leads to firm performance. Based on the above discussions and findings, it is hypothesized that CCT-business alignment has a positive impact on firm performance.

H2: CCT-business alignment has a positive impact on firm performance.

2.1. Control Variables

2.1.1. Firm Size and CCT-business alignment

Lee and Xia (2006) emphasized the importance of firm size in evaluating the value of IT in business practices. CCT allows small firms to set up new IT infrastructure with a low IT budget, and hence such firms can achieve more business values from CCT compared with large firms (Plummer, 2008; Son et al., 2014). Therefore, the size of the firm in terms of holding several employees is considered as a control variable in determining CCT-business alignment.

2.1.2. Industry Type and CCT-business alignment

Son et al. (2014) also included the industrial sector as a control variable to check industry-specific effects on market reactions to cloud computing initiatives. They found that firms in the service industry attain comparatively higher payback from cloud computing services than those in non-service industries. Son et al., 2014 stressed that managers, who are planning to adopt cloud computing in their firms, should consider the industry-specific characteristics to control the success of IT investments. Therefore, the industry type is taken as another control variable in the study.

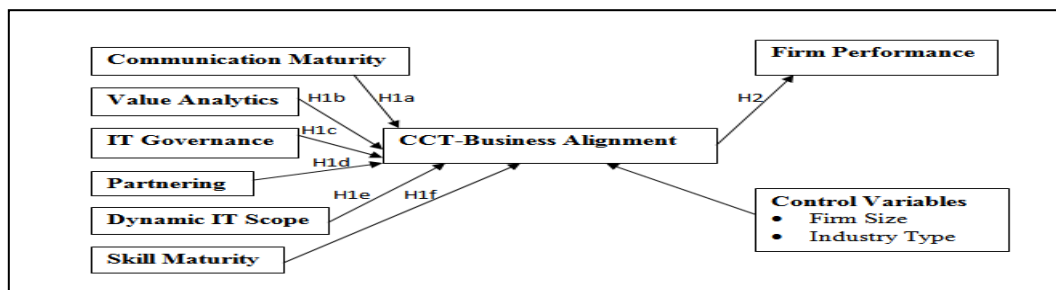


Figure 1. Research Model

3. Research Methodology

The questionnaire-based survey method is used for data collection. The questionnaire-based survey method is used for data collection and the survey instrument includes 45 items. The construct 'firm performance' has five items, as adopted from the scale of Gerow et al. (2014). The six items construct, 'CCT-Business alignment' is adopted from the scale of Gerow et al. (2014). The other 34 items related to the constructs of communication maturity, value analytics, partnering, IT governance, dynamic IT scope and skill maturity have been adopted from the scale proposed and tested by Luftman et al. (2017). These scales are adopted and transformed into the cloud computing context. Since the questionnaire consists of 45 items, at least 450 responses are required to test the hypotheses by maintaining a 1:10 ratio between an item and respondents (Hair et al., 2010). Cloud initiatives require a unified front that combines executive leaders, business managers, and IT professionals (Ricci and Dailey, 2017). Hence in this study, the respondents are IT professionals and business executives of cloud computing adopter firms and are key decision-makers.

4. Conclusions

This study will release a new perspective on leveraging IT value in a cloud computing environment in the organizations. Academicians can further utilize this research to explore additional activity-based constructs on CCT-business alignment. The results of this study will help the executives to articulate broad action plans for achieving greater CCT-business alignment and this enhances the effect of cloud computing on the business. This research also enhances the application of the proposed SAM model as a tool to leverage IT-Business alignment in a cloud platform effectively. This study provides an idea to a business and IT managers that where their firm stands in its alignment and how they can improve business-IT alignment in a cloud computing environment.

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