IMPACT: International Journal of Research in Business Management (IMPACT: IJRBM)
ISSN(P): 2347-4572; ISSN(E): 2321-886X
Vol. 4, Issue 10, Oct 2016, 71-82

AN INTEGRATED MODEL OF STRATEGIC IT ALIGNMENT AND IS CAPABILITIES FOR CONTRIBUTION ORGANIZATION PERFORMANCE

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ABSTRACT

This study aims to investigate the relationship among strategic IT alignment, IS capabilities, IT support for core competencies, and organization performance. Samples are 161 organizations which are selected through the Stratified random sampling method from the name list of the Stock Exchange of Thailand (SET). Survey research with structured questionnaire and recommendation form are used as the instruments in collecting data. The structural equation modeling (SEM) is assigned to test hypothesis with PLS (Partial Least Square). The measurement model uses factor analysis with EFA to explore the set of variables, and uses CFA to purify each construct and measurement model with PLS. Composite reliability is applied to ensure reliability by examining convergence and discriminant validity of the constructs.

The results assert strongly support on our research model that strategic IT alignment and IS capabilities positively influence IT support for core competencies. Usage IT support its core competencies positively influence the organization performance. Finally, it confirms that the integrated model between strategic IT alignment and IS capabilities positively affect on the organization performance through IT support for core competencies as the strong mediator of the model.

KEYWORDS: Strategic IT Alignment, IS Capabilities, IT Support for Core Competencies, Organization Performance

BACKGROUND/ OBJECTIVES AND GOALS

The strategic IT alignment is anintegration model between business strategy and IT strategy which can drive the organizational capabilities to leverage technology for achieving the organization goals and attaining asustained competitive advantage (Henderson&Venkatraman, 1999). Information Technology (IT) can positively influence organizational profitability bycreating superior strategies that achieve a competitive advantage (Kearns &Lederer,2003). The resource-based view (RBV) is a basic theory for archiving a competitive advantage for organization (Barney, 1991). Rivardet al.(2006)found that firm's assets affected on firm performance.

In addition, Ravichandran and Lertwongsatien(2005)found the relationship between IS support for core competencies and firm performance by invested resources in developing IT system for operating in firm. Most studies link strategic IT alignment with competitive advantage and firm performance (Oh &Pinsonneault, 2007; Leidner et al., 2010; Chen et al., 2010; Wade &Hulland, 2004; Majeed, 2011). Especially, Rose et al., (2010) confirmed that firm resources affect on competitive advantage and enhancing organization performance.

Before A.D. 2010 there were no empirical studies of strategic IT alignment that link with resource-based view and affect on firm performance. Until a few recent years, there are a few studies analyze the impact of strategic IT alignment, IS capabilities that affect on competitive advantage and firm performance (Chen et al., 2010; Tallon & Pinsonneault, 2011; Subriadi et al., 2013).

This study aims to explored the relationship among strategic IT alignment, IS capabilities, IT support for core competencies, and organization performance. So, this study draws on strategic IT alignment theory and IS capabilities how strategic IT alignment and IS capabilities influence organization performance by linking with IT support for core competencies. To the best of our knowledge, there are a few study works in Thailand. It can create new knowledge which relate to the application of information technology in Thailand.

RESEARCH METHODS

This research was combined quantitative and qualitative research. Survey research with structural questionnaires and recommendation form were used as instruments to collect data. The population and stratified random sampling were organizations from the name list of the Stock Exchange of Thailand (SET). The 226 questionnaires were mailed and e-mailed to chief information officers (CIO) of each organization. A total of 161 questionnaires were returned. The result in a response rate is 71.24 percent. Non-response bias was examined by comparing the profile of respondents in term of organization type and organization size. The chi-square tests comparing early and late respondents on organization type and organization size also revealed no significant response bias. Twenty-three percent of the responding organizations were in industrials. The organizations' operating time was between 21 and 30 years. The organization size was less than 500 employees, IS department size in these organizations was between 21 and 30 employees. The proportion of IT budget was between 5 and 10 percent. The survey was targeted at CIOs in the IS department. Most of them were managers or associate managers who had authority in management about strategic plan of IS department. The job titles of the other respondents (director or associate director, president or vice president, senior IS executives) also indicate that they are CIOs in IS department.

THEORETICAL BACKGROUND

Strategic IT Alignment

Henderson and Venkatraman (1999) proposed strategic IT alignment. It was an integrated model between business strategy and IT strategy. It can drive the organization's capabilities and force technology to achieve the organization goal and accomplish competitive advantage. The organization can use strategic IT alignment by aligning the business plan and IT plan together, then processing with using the IT/IS resources to get the organization performance. Kearns and Lederer (2003) found that strategic IT alignment was the best factor that explained the competitive advantage by aligning between IT plans and business plans. They are significantly, positively related to the usage of IT for competitive advantage. Further, Rashidirad et al. (2012) proposed the conceptual model of strategic IT alignment for leading to E-business value creation by linking competitive strategy with dynamic capability.

IS Capabilities

IS Capabilities are the routines of the IS department which is defined in term of IS resources used to services in organization. Day (1994) developed IS Capabilities from resource-based view in IS discipline. Later, Wade and Hulland

(2004) confirmed the concept about IS Capabilities in three dimensions; Inside-Out capabilities, Outside-In capabilities, and spanning capabilities which influence on the firm performance. Rivard et al. (2006) found that IT supporting for strategy directly affected on performance, IT supporting for firm assets strongly affected on IT supporting for strategy, and it directly affected on profitability and performance. Likewise, Yin and Yang (2011) proposed competitive advantage model by linking IT Capabilities and IT support for core competencies, the results revealed that IT Capabilities influenced IT support for core competencies.

IT SUPPORT FOR CORE COMPETENCIES

The IT support for core competencies was the usage of IT/IS resources to support core functionalities of organizations for improving and enhancing their operations. Hamel (1994) categorized organization's core competencies into three functions. In addition, Ravichandran and Lertwongstien (2005) developed three scales including market-access competency, integrity-related competency, and functionality-related competency. They confirmed that IS capabilities had positively affect on IT supporting for core competencies, and IT supporting for core competencies had influence on a firm performance relatively.

Organization Performance

Organization performance in IS discipline is the results of operation to achieve the firm's goals by using IT resources and align Business Strategy with IS Strategy to achieve organization performance (Oh & Pinsonneault, 2007). Melville et al. (2004) defined that organization performance is the results of operation to achieve the firm's goals by using IT Business value model generate the business processes for attaining the business processes performance and organization performance. The organization performance can measure both financial and non financial views. This study measure firm performancefrom Baldrige Criteria which developed by Mithas et al. (2011). It was categorized in four perspectives ; customer perspectives, financial perspectives, human resource perspectives, and organizational effectiveness perspectives.

IT and Organization Performance

Organization performance is very important indicator that measures the results and success of operations and activities to achieve the organization's goals (Melville et al., 2004; Mithas et al., 2011). For IS discipline, researchers often link IT and organization performance to focus on usage IT applications for attaining competitive advantage and lead to organization performance (Oh & Pinsonneault, 2007). The organization performance can measure from finance such as profitability, market share, sales growth (Mithas et al., 2011). For non- financial view, it can be measured from customers' satisfaction, human's knowledge etc (Santhanam & Hartono, 2003). Likewise, Ravichandran and Lertwongsatien (2005) asserted that IT support for core competencies influenced firm performance. Similarly, Hasan(2008), Majeed(2011), and Subriadi et al.(2013) asserted that firm competitive advantage affected on firm performance.

RESEARCH MODEL AND HYPOTHESES

The research model draws from interrelation strategic IT alignment with IS capabilities and posit the usage IT can enhance core competencies and create competitive advantage and achieve the organization performance. Thus, thestudy defines the constructs of model and develop the relationship among them in Figure. 1

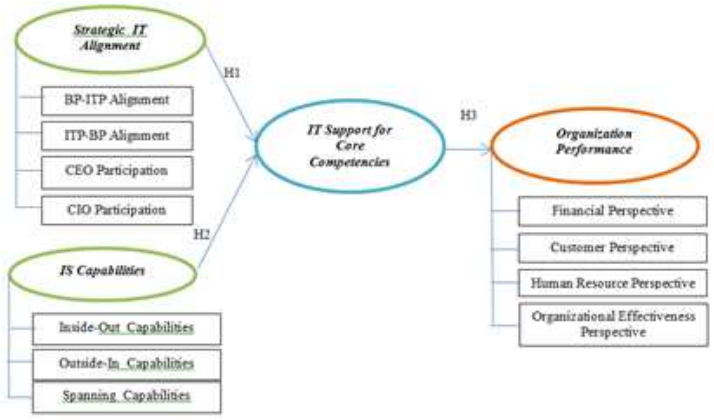

Figure 1: Mode / Theoretical Framework of this Study

Strategic IT Alignment and IT Support for Core Competencies

Strategic IT alignment Model (SAM) was proposed by Henderson and Venkatraman (1999) which focuses on four components including business strategy, organizational infrastructure and process, IT strategy and IS infrastructure and process. Kearns and Lederer (2003) found that the strategic IT alignment process is positively influence on information intensity both the participation of the Chief Information Officer (CIO) in business planning and participation of the Chief Executive Officer (CEO) in IT planning. The strategic IT alignment influence competitive advantage. Later, Bhatt et al. (2010) proposed the IT infrastructure which is one of a part the strategic IT alignment that affect on organizational responsiveness to customers need. Similarly, Subriadi, et al. (2013) found that strategic IT alignment influenced IT support for core competency. Regarding the above results, the hypothesis is conducted by

H1: There is a positive relationship between strategic IT alignment and IT support for core competencies.

IS Capabilities and ITS Support for Core Competencies?

IS capabilities are one type of organization's resource that are the routines functionalities of IT/IS department which were proposed by Day (1994). Day (1994) defined and categorized IS resource capabilities into three types including inside-out, outside-in, and spanning. In addition, Wade and Hulland (2004) presented that the IS resources capabilities available and useful to were contribute direct affected on competitive advantage. Later, Ravichandran and Lertwongsatien (2005) and Rivard et al. (2006) summarized that IS capabilities affected on IT supporting for core competencies by the organization usage IT. Furthermore, Mithas et al. (2011) indicated that the information management capability affected on organization performance through organization capability. Thus, we propose the following hypothesis was below.

H2: There is a positive relationship between IS Capabilities and IT support for core competencies.

IT Support for Core Competencies and Organization Performance

Referring to the result of Ravichandran and Lertwongstien (2005), it was found that IT support for core competencies affected on the firm performance. Revealed that there was relationship between competitive advantage and the firm performance. Similarly, Rivard et al.(2006), Chang et al. (2006), andMajeed (2011) confirmed that resource-based view positively affected on firm performance. Subriadi etal. (2013) asserted that strategic IT alignment influenced IT

support for core competency, and IT support for core competency influenced the organization performance. Mithas et al., (2011) revealed that information management capabilities affected on organization performance through organization capabilities. Thus, the hypothesis was conducted below.

H3: There is a positive relationship between IT support for core competencies and organization performance.

MEASURE

Our conceptual framework consisted of four constructs which were developed from the theories related to strategic IT alignment, IS capabilities, core competencies, and organization performance. The definition of constructs and summary of the sources were derived from theories and previous studies. Strategic IT alignment was measured from integration between business strategy and IT strategy in using IT, CIO and CEO participation for operating to achieve organization goals. This scale developed from Henderson and Venkatraman(1999), Kearns and Lederer (2003), and Lindow et al.(2010). We defined IS capabilities as IS resources of organization whichwere categorized three dimensions including inside-out capabilities, outside-in capabilities, and spanning capabilities (Day,1994 ; Wade &Hulland, 2004). While IT support for core competencies were the term of usage IS resources to support core functionalities of organization that affected on firm performance (Ravichandran & Lertwongstien, 2005; Rivard et al.,2006 ;Majeed, 2011). Organization performance used Baldrige criteria that measured in four perspectives: financial perspective, customer perspective, human resource perspective, and organizational perspective (Mithas et al., 2011).

In addition, regarding the theoretical and previous studies, the scales of four constructs used five points Likert scale to measure the CIO's opinion (1: strongly disagree, 2: disagree, 3: neither disagree nor agree, 4: agree, and 5: strongly agree).

SCALE VALIDATION

The scales were validated by using the standard procedures both validity and reliability assessment. All items of scales related domain were pooled and used factor analysis both EFA (Exploratory Factor Analysis) and CFA(Confirmatory Factor Analysis) to assessed their convergent and discriminant validity. A scale was assessed to have appropriate convergent validity when all items loaded highly on one factor. The factor loadings of items on each factor with high loadings, it indicated the set of scales had adequate convergent and discriminant validity. The reliability of these scales were refined and assessed, the Cronbach's alpha value and composite reliability(CR) for all scales were greater than 0.7, AVE and $\sqrt{AVE}$ were higher than 0.5 (Chin,2001). Thus, it concluded that the scales adequate had validity and reliability.

RESEARCH RESULTS

Statistical Analysis

This research uses PLS to analyze and interpret in two phases. First, the measurement of model performance is assessed and refined by evaluating the structural model, both validity and reliability. The results validity and reliability of the measurement model assessment in Table 1 indicates that strategic IT alignment, IS capabilities, IT support for core competencies, and organization performance are statistically significant.

Second phase uses PLS to test the structural model.

Table 1: Reliability and Discriminant Validity for Model Measurement

Construct	Cronbach's Alpha	CR	AVE	$\sqrt{AVE}$
BP-ITP Alignment	0.923	0.826	0.549	0.7409
ITP-BP Alignment	0.918	0.836	0.629	0.7931
CEO Participation	0.924	0.778	0.554	0.7443
CIO Participation	0.918	0.879	0.645	0.8031
Inside-out Capabilities	0.916	0.906	0.763	0.8735
Outside-in Capabilities	0.919	0.904	0.758	0.8706
Spanning Capabilities	0.918	0.916	0.732	0.8556
Core Competency	0.905	0.854	0.663	0.8142
Finance Perspective	0.926	0.914	0.781	0.8837
Customer Perspective	0.914	0.897	0.745	0.8631
Human Perspective	0.916	0.890	0.730	0.8544
Organization Perspective	0.915	0.892	0.734	0.8567

Result of Hypothesis Testing

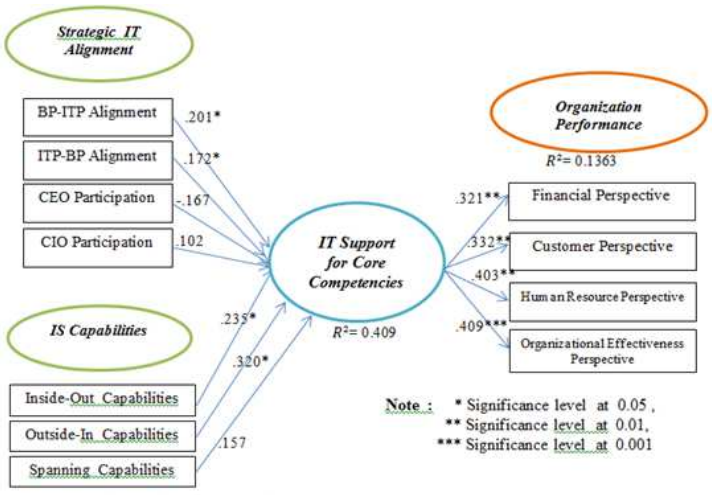

Figure 2: The Results of Testing the Structural Model of the Theoretical Framework

Fig.2 shows the path coefficient and R^2 value of the structural model. The results reveal that 40.90 percent of variance in IT supports for core competencies, and 13.63 percent of variance in organization performance. The results indicate that most of path coefficients are path coefficient statistically significant. The BP-ITP alignment (.201, P ≤ .05), ITP-BP alignment (.172, P ≤ .05), Inside-out capabilities (.235, P ≤ .05), outside-in capabilities (.320, P ≤ .05). Organization performance in financial perspective (.321, P ≤ .01), organization performance in customer perspective (.332, P ≤ .01), organization performance in human resources perspective (.403, P ≤ .01) and organization performance in organizational effectiveness (.409, P ≤ .001), which has a positive relationship with organization performance respectively. Overall, these results strongly support for all hypothesized relationship in our model.

Relationship between Strategic ITS Alignment and IT Support for Core Competencies

The hypothesis H1 comprises four hypotheses: H1a, H1b, H1c, and H1d. The result shows a significant path coefficient linking BP-ITP alignment to IT support for core competencies (.201, P ≤.05), path coefficient linking ITP-BP alignment to IT support for core competencies (.172, P ≤.05). Thus, it indicates that business plan and IT plan alignment (BP-ITP alignment) and IT plan and business plan alignment (ITP-BP alignment) influence IT support for core competencies. While path coefficient linking CEO participation, and linking CIO participation to IT support for core competencies of H1c (-.167, P >.05), and H1d (.102, P >.05) respectively. Thus, it indicates that H1c, H1d are not statistically significant. So, it concludes that CIO participation and CEO participation do not influence IT support for core competencies which are inconsistent to the results of Kearns and Lederer (2003).

Finally, the Strategic IT Alignment affects on IT support for core competencies partially. The results support the theories and previous studies. For example, Kearns and Lederer (2003), Tallon and Pinsonneault (2011), and Subriadi et al., (2013) asserted that aligning business plan and IT plan influenced the usage IT for support organizational core competencies. In addition, Gerow et al. (2014) revealed the relationship among these constructs. They were both consistent and inconsistent from the theories and previous studies.

Relationship Between IS Capabilities and IT Support for Core Competencies

The hypothesis H2 comprises three hypotheses: H2a, H2b, and H2c. The results show a significant path coefficient linking inside-out capabilities to IT support for core competencies (.235, P ≤.05), and path coefficient linking outside-in capabilities to IT support for core competencies (.320, P ≤.05) which indicate that they were statistically significant. So, we conclude inside-out capabilities and outside-in capabilities have influence on IT support for core competencies. While path coefficient linking spanning capabilities to IT support for core competencies (.157, P >.05), it indicate that spanning capabilities do not influence on IT support for core competencies which is inconsistent according to Wade and Hulland's theory (2004) and Day (1994).

Finally, IS capabilities affect on IT support for core competencies partially which support the theories and previous studies. For example, Kearns and Lederer (2003) and Rivard et al.(2006) asserted that information intensity and usage of IT as IS resources influenced firm core competencies and created competitive advantage. Likewise, Ravichandran and Lertwongstien (2005) and Bi et al.(2013) asserted that IS capabilities positively affected on IT support for core competencies.

Relationship between ITS Support for Core Competencies and Organization Performance

The hypothesis H3 comprises four hypotheses: H3a, H3b, H3c, and H3d. The results of all path coefficients are linking IT support for core competencies to organization performance in four perspectives. They were statistically significant (financial=.321, P≤.01; Customer=.332, P≤.01; human resource=.403, P≤.01; and = organization effectiveness=.409, P≤.001). The results assert that IT support for core competencies strongly affect on organization performance which support the theories and previous studies. For example, Ravichandran and Lertwongstien (2005), and Oh and Pinsonneault (2007) revealed that IT support for core competencies positively affected on firm performance. Furthermore, many researchers pointed out that firm core competencies by usage IT affected on organization performance (Hasan, 2008; Mithas et al., 2011; and Subriadi et al., 2013).

Consequently, the study concluds that the integrated model between strategic IT alignment and IS capabilities as resource-based view (RBV) affect on organization performance through IT support for core competencies as strong mediator of model.

DISCUSSIONS AND CONCLUSIONS

The study, we drew strategic IT alignment from SAM (Strategic Alignment Model), IS capabilities from resource-based view theory in IS discipline, and IT support for core competencies to examine how they influence on organization performance. We found that strategic IT alignment and IS capabilities partially affected on IT usage to support organization's core competencies. Since the theories and previous studies are made from western contexts but this study is operated with Thai organizations, according to the name list of Stock Exchange of Thailand (SET). Thus, there are many differences from the original context such as management system, executives' role, and organizational environment. Although, these organizations have explicit organization chart and administration line from top management, for meeting to manage and manipulate organization's plan.

The results from CIOs' (Chief Information Officer) opinion disclose that the process of making plan starts at the CIOs' participatione and brainstorm with other department for making the strategic IT plan. Even though, the CIOs have duties to make strategic IT plan based on strategic business plans, but they cannot approve their strategic IT plan. They propose the strategic IT plans to the CEOs (Chief Exclusive Officer). When CEOs get the strategic IT plans, they will review, approve and align with strategic business plans for creating the best strategic IT plans. It confirms that the CIOs of Thai organizations have role and authority in making strategic IT plans but the final process ends at CEOs who are the top of administration line in the organizations. Forasmuch, the results show that the CIOs of Thai organizations are in the third level of the administration line from the top management, so they are limited in their decision, especially the budget or investment in IT/IS department.

The finding provides several implications for the researchers who are interested in field which is related to this study. For example, the future study will investigate on other antecedents and consequence of strategic IT alignment such as business and IT management that contribute to success factors for strategic IT alignment (Beeson &Mahamid, 2003), or IS effectiveness, service orientation, IT investment, innovation strategies and knowledge management (Tallon & Pinsonneault, 2011). Such notions of IS capabilities are firm's IT capabilities from three indicators: IT infrastructure capabilities, managerial IT skills, and partnership between IT and business (Melville, 2004; Yin & Yang, 2011). Moreover, in the other notions will examine the mediator effect between IS resource and organization performance. Consequently, the organization performance should measure from other framework such as Balanced Scorecard (Kaplan & Norton, 1996) or measure from finance such as sales growth, return on assets(ROA), return of equity(ROE), and net profit (Lindow et al., 2010 and Majeed, 2011).

ACKNOWLEDGEMENTS AND LEGAL RESPONSIBILITY

The author gratefully acknowledges the researcher and reviewers for their thoughtful and constructive reviews. The value and successful of this study, I would like to express greatly appreciation to My advisor, Assistant Professor Dr. YoudthachaiLertwaraprachaya, also to Dr. ChalermsakLertwongsatien, who is my co-advisor and advices me for the statistic in this study. My chairman, Associate Professor Dr. KanibhattiNitirojtanad, and my committee, Associate

Professor Dr. AruneeIntrapairoth, Assistant Professor Dr. DaraneePimchangthon, and Associate Professor Dr. MontriPiriyakul who advices me the technique of PLS.

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