

E-Business Practice among Small and Medium-Sized Enterprises (SMEs): A Fit Perspective

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Abstract

Appropriate deployment of e-business solutions potentially enhances firm efficiency and effectiveness. This is no exception for SMEs. Despite extensive research in this domain, there have been limited works that explore the extent to which SMEs successfully align diverse e-business capabilities to their strategic business functions. This is an important issue to investigate; considering limited resources that are commonly faced by most SMEs which in turn forces them to be more selective in e-business-related investments. This study hence explores the current state of e-business alignment of Malaysian SMEs. Self-administered survey approach was employed to obtain perceptions of owner/manager of SMEs pertaining to (i) business process importance and (ii) present e-business capabilities that support their business processes. Responses from 140 firms indicate inconsistent level of e-business alignment across various business functions. A cluster analysis further reveals three (3) distinct groups with different characteristics of e-business alignment namely: low fit, moderately fit, and highly fit. Despite several limitations, this study has provided insights on how e-business penetrates across firm's operation and the extent it corresponds to the most important functions of business. This study therefore suggests that firms relatively have different priority over e-business to support their business. These findings have also provided more insights such as why some firms do not progress into higher e-business ladder that further justifies unequal deployment of e-business solutions amongst firms.

Keywords: e-business, alignment, SMEs, Malaysia

Introduction

Small and Medium-sized Enterprises (SMEs) sector anchors most developing nations economy considering its substantial contribution to gross domestic product (GDP) and employment opportunities. There have been continuous efforts to enhance this sector's efficiency and productivity. Information Technology/Information Systems (IT/IS) is one of the potential mechanisms to support such effort. Internet commercialization further spurs greater interest towards IT/IS usage amongst firms. The Internet features such as global connectivity and public networking system offer wide range of online-based applications (e-business) as means to transform various aspects of business. Specifically, these applications benefit firms in terms of making global presence, improving business process efficiency, and widening market share. For the purpose of this study, e-business is defined as "*a transformation of key business processes by using an Internet technology*" (Meckel *et al.*, 2004). Therefore, the word e-business and Internet is used interchangeably throughout this paper.

E-business offers vast capabilities to support functions ranging from information searching, communication, and transactional-related tasks (Wilson *et al.*, 2008). Nonetheless, these capabilities do not equally benefit all firms (Roberts & Toleman, 2007). Due to resources constraint, SMEs are relatively more selective to invest on e-business applications/solutions. E-business turns to be worthwhile if it supports crucial aspects of the firm's operation (Bharati & Chaudhury, 2006). This clearly indicates the importance of aligning multi-faceted e-business applications to the most salient functions of the firm. Hence, having Internet capabilities aligned with most crucial business functions would then optimize e-business values to the firm (Raymond & Bergeron, 2008).

The issue of IT/IS alignment (fit) has been receiving considerable attention among researchers (Chan & Reich, 2007). Nevertheless, there are limited attempts to explore IT/IS alignment amongst SMEs (Silvius *et al.*, 2009). Additionally, earlier works mainly concentrate on IT/IS alignment in general (Cragg *et al.*, 2002) or alignment of specific business function (Ismail & King, 2007; Hooper *et al.*, 2010). Works are still limited in investigating the alignment on specific IT/IS application such as e-business (Raymond & Bergeron, 2008). Hence, this study has two major objectives (i) to assess systematically the current state of e-business alignment amongst SMEs, and (ii) to establish several profiles of firms with heterogeneous characteristics of e-business alignment.

This paper thus extends existing literature in several aspects. First, it investigates alignment issue from a specific type of IT/IS application. The Internet, as compared to other types of IT/IS is unique as it is an open standard system, enables global connectivity, and uses public network as a backbone infrastructure (Zhu & Kraemer, 2005). Furthermore, the Internet technology has both computing and communicating capabilities (Premkumar, 2003). Such unique capabilities promote efficiency for inter-firm interaction, transactions processing, and market expansion initiative. Secondly, instead of investigating IT alignment from strategic perspective (Cragg *et al.*, 2002; Chan *et al.*, 2006), this study evaluates e-business alignment from business process perspective. As Melville and Ramirez (2008) report, different business processes have relatively inconsistent degree of complexity, therefore requires certain types of Internet support. Additionally, viewing alignment issue from such perspective facilitates firms to locate business areas that are highly supported or least supported by the Internet (Cragg *et al.*, 2007).

There are five interlinking sections in this paper. The next section briefly discusses relevant literature on SMEs, e-business, and concept of fit. It then leads to the proposed research framework. The third section outlines measurement and data collection procedures employed to achieve the major objectives mentioned above. The fourth section reports and discusses findings of the study. Finally, the last section states the conclusion, limitations of study, and future works.

Literature Review

IT, E-Business, and SMEs

SMEs depart from their larger counterparts in several aspects. They have least complicated structure, which make them easily adaptable to environmental changes (Raymond *et al.*, 2005). In turn, the decision making process becomes more centralized (Bharati & Chaudhury, 2006). With respect to risk, SMEs are relatively faced with greater business risk than larger firms apart from facing higher rate of business failure (DeLone, 1988). Due to limited access to information, SMEs also have to deal with greater business uncertainty in managing firm's daily operation (Aragon-Correa & Cordon-Pozo, 2005).

From IT/IS practice perspective, firm size is one of the possible factors that has influence on IT/IS usage. From the general point of view, larger firms have greater capability to embrace IT/IS compared to SMEs (Bharati & Chaudhury, 2006). This is particularly due to several factors. First, SMEs usually have no clear strategy to facilitate effective IT/IS usage (Cragg & Zinatelli, 1995). Secondly, smaller firms have limited financial and expertise resources (Thong, 2001). Lack of internal IT experts in SMEs give more pressure for them to rely upon external experts to facilitate in IT/IS related projects (Premkumar, 2003). Thirdly, SMEs either use IT/IS to support operational functions without any strategic focus (Schubert &

Leimstoll, 2007) or they simply adopt low end applications that are inadequate for the firm (Thong *et al.*, 1996). Such practices obviously restrict the firms from fully optimizing the real value of IT/IS deployment.

Since Internet booming, more efforts have been initiated to investigate the Internet impacts to the SMEs. This transformation deserves further investigation as the Internet technology might give different impacts to the SMEs than other types of IT/IS applications. Considering these differing capabilities of conventional IT/IS and the Internet, therefore a unique model is needed to understand the roles of specific IT/IS innovation in SMEs (Levy & Powell, 2000). Based on the above argument, therefore, it is essential to investigate the use of e-business application among SMEs.

A large portion of studies have tried to establish wide range of drivers/barriers of e-business practices (Mohamad & Ismail, 2009; Parker & Castleman, 2007). There are also growing attempts to investigate the extent to which e-business diffuse across various firms functions (Bharati & Chaudhury, 2006; Alam *et al.*, 2007) as well as the impact of e-business to firm performance (Pflugheoft *et al.*, 2003; Raymond & Bergeron, 2008).

Internet-based applications have been gradually diffused into many aspects of firm value chains (Porter, 2001). These value chains comprising of physical and information processing components demand for differing degree of Internet technology support (Bharati & Chaudhury, 2006). Several works have clearly indicated that the Internet does have different roles in supporting various firm functions. For example, Magal and Kosalge (2006) indicate that marketing, procurement, in-bound, and out-bound functions receive relatively higher Internet support than other functions. Meanwhile, firms in production sector heavily consider e-business for primary functions while service sectors perceive greater e-business capabilities in supporting functions.

Despite some of these e-business potentials, not all firms perceive e-business as a strategic solution to their firms (Bharadwaj & Soni, 2007). Thus, it is not reasonable to assume that all firms would extensively deploy the Internet to support all aspects of their business. Firm may consider applications that provide substantial impact to their business activities or applications that are aligned with firm's objectives (Levy & Powell, 2003). Furthermore, SMEs would also have greater tendency to deploy e-business applications to support their core business functions rather than other supporting activities (Bharati & Chaudhury, 2009). This clearly suggests the importance of aligning various e-business capabilities to the most crucial aspects of the SMEs operation. Appropriate e-business alignment is indeed getting more critical considering firms limited resources to heavily invest on e-business.

Though many studies have investigated on Internet diffusion across business processes, there are still scarce studies on aligning e-business applications/solutions to the most crucial functions of a firm's business processes. This study therefore bridges the gap by assessing the current state of e-business fit across differing complexity of business processes.

Concept of Fit and E-business Alignment

Concept of fit as proposed by Burns and Stalker (1961) anchors the main hypothesis of contingency theory. The theory surmises that (1) 'there is no best way to organize, and (2) any way of organizing is not effective' (Galbraith, 1974, p.2). The concept initially receives considerable attention in understanding organizational behavior (Donaldson, 2001). Other works on the concept have further extended the understanding of fit in term of its conceptualization (Henderson & Venkatraman, 1993), measurement (Chan *et al.*, 1997), antecedents to fit (Hussin *et al.*, 2002; Ismail & King, 2007), and its relationship with performance (Chan *et al.*, 2006; Hooper *et al.*, 2010).

Originally, a Strategic Alignment Model (SAM) was proposed by Henderson and Venkatraman (1991) as a useful framework to understand alignment from IT/IS perspective. The model conceptualizes alignment as multidimensional construct with four (4) major domains namely: business strategy, IT strategy, organizational infrastructure, and IT infrastructure. SAM indicates that alignment will take place either at strategic level (IT strategy vs. business strategy) or at process level (firm infrastructure vs. IT infrastructure). To date, studies mainly concentrate on strategic level alignment (Chan *et al.*, 2006; Sabherwal & Chan, 2001), while there are limited attempts to investigate process level alignment (Cragg *et al.*, 2007). This is a crucial attempt considering the fact that strategy implementation requires an effective interaction of interrelated business activities (Tallon, 2007).

Chan *et al.* (1997) was among the first to provide empirical evidences on strategic alignment and confirmed the moderating effect of strategic alignments to performance based on the SAM model. Since then, other similar works follow suit (Bergeron *et al.*, 2001; Chan *et al.*, 2006). However, most of the studies on IT alignment primarily investigate large entities (Chan *et al.*, 2006; Sabherwal & Chan, 2001) while works to understand alignment in SMEs are relatively scarce. Hussin *et al.* (2002) was among the earlier studies to investigate IT alignment within the SMEs setting. They reported that IT alignment issue does matter and therefore deserve further investigation. Cragg *et al.* (2002) further ascertained the positive relationship between IT alignment and firm performance. Another study by Ismail and King (2007; 2005) extended further by examining IT alignment from accounting information system perspective. More recently, Cragg *et al.* (2007) found that, IT/IS seems to provide inconsistent support across various business functions. Their work further indicates the need to investigate IT alignment at business process level.

Based on the above discussion, this study has initiated investigation on business process alignment from Internet-based application perspective amongst SMEs.

Methodology

Measurement of constructs

Business process. Business processes that are potentially supported by the Internet are compiled from extensive literature review. The activities included are generic in nature to represent firms in various business sectors. Consequently, this study does not consider functions that are specific to certain sectors. Based on several earlier works, 39 activities are shortlisted (Lefebvre *et al.*, 2005; Magal & Kosalge, 2006; Wilson *et al.*, 2008). These activities are then classified into three (3) categories namely: internal operation, procurement, and sales-related (Levy *et al.*, 2005). Twenty-five (25) e-business academic experts and SMEs representatives have evaluated these preliminary listing of business processes for clarity and appropriateness. Based on experts' feedback, the final instrument retained 36 out of 39 items with some paraphrasing and revision on the wordings. These refined items then formed a basis for assessing the business process importance and e-business capabilities to support each business process.

E-Business fit. There have been constant debates on measuring fit as it corresponds to different mathematical computation and analysis technique (Van de Ven & Drazin, 1985). Venkatraman (1989) suggested six (6) perspectives of fit namely: moderation, mediation, matching, co-variation, profile deviation, and gestalt. Moderation and matching perspectives have been widely considered in previous works (Chan *et al.*, 1997; Premkumar *et al.*, 2005). Some other studies further noted that moderation approach seems to be more meaningful especially in associating alignment to firm performance (Cragg *et al.*, 2002; Ismail & King, 2005). The moderation approach takes into account interaction effect between two variables and assesses its effect to firm performance. At the same time, moderation approach provides greater merit (by producing higher alignment score) when high alignment takes place at the most crucial functions rather than high alignment which takes place at least crucial function (Hooper *et al.*, 2010).

Chan *et al.* (1997) however cautioned on 'anti-synergy' effect resulting from moderation approach. 'Anti-synergy' refers to the situation which firms with very different scores of business process importance and e-business capability (indicating a different level of alignment) have relatively equal e-business fit score. Hooper *et al.* (2010) then refined the measurement approach by retaining the advantages of both matching and moderation approach while minimizing the 'anti-synergy' problem that arises. Consequently, this study employed the refined measurement approach to determine e-business fit. Using the work of Chan *et al.* (1997), this study conceptualizes e-business fit as an interaction effect of two variables namely; business process importance and e-business capability. Based upon Cragg *et al.*

(2007) business process importance solicits firm perception on relative importance of each of the business process identified. This variable was measured using a five-point scale with '1' as 'not important at all' and '5' as 'highly important'. On the other hand, e-business capabilities measures the extent of Internet technologies support (such as e-mail, web, intranet, and extranet) to each of the corresponding business process. This construct was measured using a five-point scale with '1' referring to 'not supported at all' and '5' to indicate 'highly supported'. The scores obtained from both constructs were then used to compute e-business fit score for individual business process. The fit score was computed using the following formula. The fit score can assume values ranging from 0 (very low fit) to 20 (very high fit).

$$E\text{-business fit score} = (4 - |x - y|) * ((x + y)/2)$$

Where x refers to the rating of 'business process importance' while y refers to rating of 'e-business capability'

Research Model

Fig. 1 translates the above conceptualization into a working research model for investigation. The diagram indicates that e-business fit is a derived construct, resulting from the interaction of two constructs namely; business process importance and e-business capability.

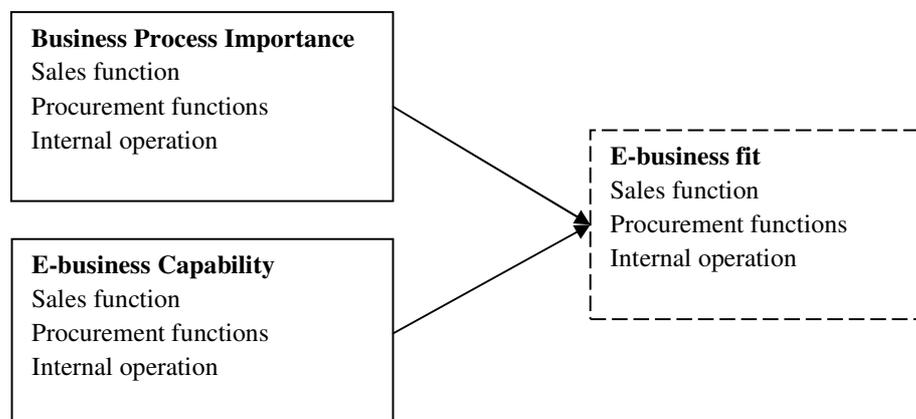


Fig 1. Research model

Data Collection

Considering the varying definition of SMEs, this study defines SMEs based on the National SMEs Development Council (2005) guideline¹. However, micro firms (less than five employees) are excluded considering their limited e-business capabilities and the unique nature of operation (Schubert & Leimstoll, 2007). Malaysian SMEs with web presence are used as samples of this study as they are indicators of firm practicing e-business (Brand & Huizingh, 2008).

A self-administered questionnaire was mailed to 1,600 firms selected from two primary databases of Malaysian firms i.e. SME Corporation and Malaysia External Trade Development Corporation (MATRADE). The targeted respondents were owners/manager of the firm who are expected to be knowledgeable about firm operation and nature of e-business practice. Besides, getting responses from those with direct responsibility of firm's IT-related matters could be difficult as most SMEs hardly to have a formal IT unit (Bharati & Chaudhury, 2009). After about three months, 155 firms responded but only 140 responses (9% from the total sample) are usable for analysis. Table 1 presents a descriptive profile of firms and respondents.

Table 1: Demographic profile of responding firms

Age of firm	n	%	Position	n	%
Less than 10 years	42	30.6	Owner/proprietor	38	27.1
10 – 20 years	49	35.8	CEO	28	20.0
20 – 30 years	24	17.5	Senior Manager	40	28.6
30 years and above	22	16.1	Manager	22	15.7
Not disclosed	3		Others	12	8.6
Sector			Gender		
Manufacturing –based	94	67.1	Male	98	70.0
Non-manufacturing based	46	32.9	Female	42	30.0
Firm Size			Length of experience		
Small	73	52.1	5 years or less	58	42.0
Medium	67	47.9	5 – 10 years	35	25.4
Market orientation			11 - 15 years	22	15.9
Domestic market only	42	30.2	16 years and above	23	16.7
Domestic and less than 50% export	65	46.8	Not disclosed	2	
Domestic and more than 50% export	32	23.0			
Not disclosed	1				
Current stage of Internet usage					
Level 0 - Email	11	7.85			
Level 1 - Web presence	54	38.6			
Level 2 – Prospecting	55	39.3			
Level 3 - Business integration	14	10.0			
Level 4 - Business transformation	6	4.3			

Findings and Discussions

E-business Capability and Assessment of Fit

Preliminary analysis revealed that the Internet support is somewhat extensive for information searching, communication, and marketing-related tasks (table not disclosed). This is because these are among the functions that are 'easily transformed by the Internet' (Koh & Nam, 2005). Meanwhile, transactional related activities (such as payment, order processing, and document exchange) are not widely available in most firms. This is partly because such capabilities require sophisticated IT infrastructure (Tagliavini *et al.*, 2001). Thus, not many firms can afford to integrate the Internet to support these processes. Finally, the result also suggests that Malaysian firms are now reaching prospecting stage. At prospecting stage,

the Internet usage relatively goes beyond e-mail usage or having basic web presence. However, the applications that transform transactional-related activities are still limited (Cheong *et al.*, 2009).

The extent of e-business alignment for each of the business process is shown by the e-business fit score. Overall results show that the levels of e-business alignment are not consistent across various business functions. Activities related to information searching, advertising, and customer service are relatively having better alignment than other activities. On the other hand, results indicate lower fit scores for other activities such as payment-related activities, employee training, and contract negotiation (table not disclosed).

However, assessment of fit on individual business process provides limited understanding of the situation considering some business activities are potentially related. Hence, computation of aggregate e-business score was done to facilitate further analysis. Principal component analysis (PCA) was first employed to reveal underlying dimensions of business process for aggregation purposes. The PCA is useful to unleash meaningful structure from the sample data (Tabachnick & Fidell, 2007). Initial checks on both constructs provide strong support on factorability of the sample data. The Kaiser-Meyer-Olkin (KMO) for 'business process importance' and 'Internet capability' is 0.915 and 0.874 respectively. Similarly, the Bartlett test of sphericity values is also significant for both constructs.

A Varimax rotation procedure employed however did not produce any meaningful structure for both constructs with several cross-loading items. Consistent with Hair *et al.* (2010), this study considered an oblique rotation procedure to simplify PCA results and interpretation. The PCA result suggested a refined framework with 32 items in five dimensions (with eigenvalue greater than 1.0). The components can be appropriately labeled as 'sales and after sales', 'procurement related', 'accounting and financial related', 'information searching', and 'in-house operation' (Principal component analysis result not shown). This structure is slightly inconsistent than the three major groups that are earlier specified (Levy *et al.*, 2005) with additional two new dimensions i.e., 'accounting and financial related' and 'information searching'.

Aggregate e-business fit score was computed based on mean product of each business process dimension. Table 2 presents mean scores of business process importance, Internet capability, and e-business fit across all five process dimensions. Overall, the results suggest e-business fit issue is present within the SMEs context. Specifically, the results show that firms perceived the Internet to be closely aligned with more salient business processes i.e. information searching, sales-related functions, and in-house operation. Meanwhile, lower alignment is observed for less salient business functions i.e. financial-related and procurement functions. These results suggest that there is diversity of e-business alignment across business functions. As indicated, firms have greater tendency to extensively integrate e-business applications to support most salient functions of their firms while minimize e-business investment on least salient functions. This section identifies the diversity of e-business fit across business process dimensions. The next section proceeds to classify the sample firms based on their characteristics of e-business fit.

Table 2: Mean score by business process dimensions

Dimensions (no. of items)	Business process importance	E-business capability	E-business fit
Procurement related (8)	3.38	2.68	9.37
Sales and after sales service (13)	3.79	3.12	11.16
Accounting and financial (3)	3.11	2.40	8.67
In-house operation (4)	3.54	3.02	10.95
Information searching (4)	4.08	3.56	12.89

Classification of firms by e-business fit characteristics

This study has considered cluster analysis due to its capability to classify objects such as respondents, products, or other entities based on given characteristics (Hair *et al.*, 2010). The clustering procedure was executed using hierarchical clustering approach (Ward method) with five e-business fit scores of all business process dimensions as the clustering variables. Meanwhile, an agglomeration coefficient change was considered as cluster determinant technique. Clustering result (Table 3) indicated a two-cluster solution could be appropriate to represent the samples based on its highest coefficient change value (48%). However, in most cases the two-cluster solution usually produces the highest coefficient change (Hair *et al.*, 2010). As such, the two-cluster solution might not adequately represent profiles of the samples. Consequently, the next solution with highest coefficient change could be selected i.e. three-cluster solution (22.9%). In other words, the cluster analysis suggests that, the sample data can be classified into three distinct groups with relatively different e-business fit characteristics.

Table 3: Cluster analysis output (partial output)

Number of clusters after combining	Agglomeration coefficient	Change in coefficient	Proportionate increase in coefficient to next stage (%)
5	4248.12	415.21	9.77
4	4663.33	441.64	9.47
3	5104.97	1171.97	22.96
2	6276.94	3055.69	48.68
1	9332.63	-	-

Table 4 further reports a slightly lower than 50% (62 firms) fit into the second cluster while the first and the third clusters have 43 and 35 membership firms respectively. For validation purpose, one-way ANOVA has indicated significant mean differences across three clusters with respect to all clustering variables. The post-hoc tests (not disclosed) also indicated significant mean differences between clusters. Both tests suggest that the three-cluster solution is relatively heterogeneous, thus the clustering result is somewhat reliable and valid.

Table 4: Comparative characteristics of e-business fit across clusters

Process dimensions	E-business fit score (mean)				ANOVA
	Cluster 1 (n=35)	Cluster 2 (n=62)	Cluster 3 (n=43)	Overall (n=140)	Sig.
Sales and after sales	14.17	11.29	7.26	11.17	74.94*
Procurement	11.77	9.53	6.16	9.38	54.48*
Accounting and financial	12.07	8.20	5.35	8.68	39.34*
Information searching	16.63	12.22	9.51	12.90	63.15*
In-house operation	14.65	10.99	6.37	10.96	58.73*

*Significant at 0.05 level

Figure 2 below further depicts the comparison using graphical representation. The diagram provides two important comparisons across clusters. First, the graph compares e-business fit characteristics within the cluster i.e. comparison with respect to the business process dimensions that are highly aligned or least aligned within each cluster. Secondly, the graph further compares overall e-business fit characteristics across clusters. The former comparison shows that for all clusters, e-business fit score is relatively higher particularly for information searching, in-house operation, and sales-related functions. As for the latter comparison, the line graph further indicates firms in the first cluster are comparatively achieving higher level of e-business alignment across all business processes when compared to firms in other clusters. Meanwhile, firms in the second cluster relatively reports moderate level of e-business alignment across all process dimensions. Finally, firms in the third cluster report consistently low level of alignment across for all aspects of operation. As the graph indicates, the most obvious differing characteristic amongst clusters is their overall e-business alignment characteristic rather than e-business alignment by business process dimensions. The cluster classification result however, is somewhat consistent with earlier studies of IT/IS alignment (Ismail & King, 2007; Cragg *et al.*, 2002). This characteristic thus would be a basis for naming the clusters in the next section.

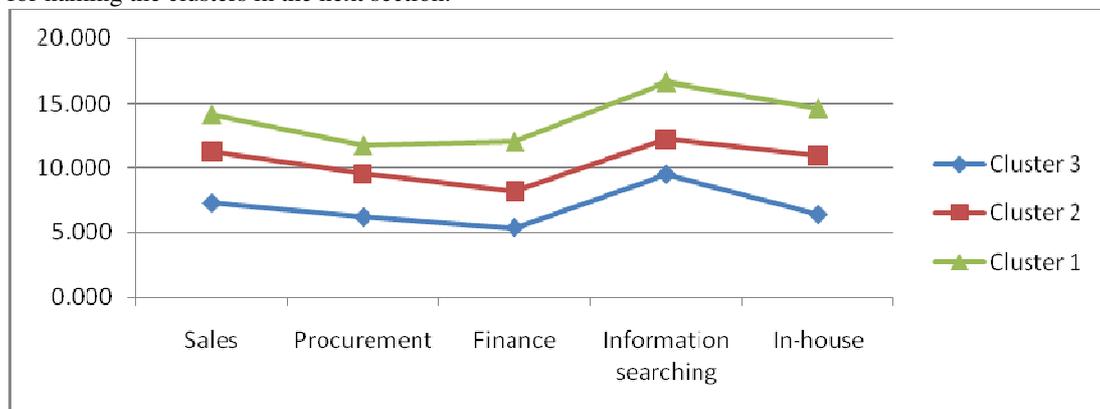


Fig 2. Comparative e-business fit characteristics within clusters and across clusters

Based on the above analysis, therefore, it is appropriate to propose that the first cluster represents firms with relatively higher e-business fit in all business functions. Therefore, the cluster could be labeled as 'highly fit'. Meanwhile, as the second cluster comprises of firms with comparatively moderate fit score in almost all aspects therefore it is acceptable to label this group as 'moderately fit'. Finally, the third cluster comprises of firms with relatively lowest fit score for all functions and therefore suits the label of 'low fit'.

Conceptually, firms in the 'highly fit' cluster perceive greater importance of e-business applications in support of various aspects of firms' operation and those applications have been deployed to support the most crucial functions of the firms. In other words, Internet capabilities of these firms are closely aligned to the most essential aspects of the firm functions. In contrast, firms classified under 'low fit' category do find several functions as crucial for their business, but they perceive limited e-business potentials to enhance efficiency of those business functions. Thus, it is presumed that the firms hardly find strategic value of the e-business to facilitate their business operation. Finally, about two-third of the responding firms, which are classified under 'moderately fit' category are in the transformation stage as the firms keep exploring the Internet potentials to support their firms.

Conclusions

E-business offers wide range of mechanisms to support firms operation. Nevertheless, SMEs are relatively more prudent concerning e-business related investment due to resources constraint. Hence, they would have to direct their investment particularly to enhance most crucial functions of the firms in order to enhance firm performance.

This paper reports diversity of e-business alignment across five business process dimensions with higher alignment on sales-related, information searching, and in-house operation. Meanwhile, firms perceive relatively lower level of alignment with respect to procurement-related and accounting/financial-related functions. Cluster analysis further proposes three distinct firms profiles with unique characteristics of e-business alignment. The clusters were labeled as 'highly fit', 'moderately fit' (transforming) and 'low fit' (limited potential).

There are also quite limited numbers of firms with highly aligned e-business capability. This could be another justification for slow progress of e-business deployment amongst SMEs. This result suggests that e-business does not equally fit all SMEs in the same manners. Although large proportion of the SMEs has initiated some kind of e-business application e.g. web presence, many firms do not progress further to the higher end of e-business ladder. Simply remaining at the early stage of e-business ladder without further progress would therefore restrict firms from optimizing real values of e-business (Magal *et al.*, 2009).

These findings benefit e-business and SMEs researchers by providing another perspective of investigating e-business phenomenon. This study views the problem from a fit perspective and thus provides a different insight to better understand the situation. The outcome would also benefit SMEs-related agencies to reconsider their strategies in promoting e-business to the SMEs. A more focused approach i.e. by identifying and providing necessary support for most potential firms to progress in e-business is more useful than employing a blanket approach to all SMEs at large.

Readers should take into accounts several limitations in generalizing these findings. First, the sample size is relatively small though this is a commonplace for studies involving owner/manager of SMEs (Dennis, 2003). Having obtained larger responses would enhance representation of the SMEs population at large. Secondly, the survey was conducted amongst SMEs in developing country. Further validation can be useful by comparing the result with other developing countries and developed nations.

Future works could further compare e-business impact to firm performance across firms with different degree of e-business alignment. If the result proves a positive relationship between the level of e-business fit and performance, it could be a good sign for firms to put continuous effort in aligning e-business capabilities to the most crucial functions in business. Next, future works could also investigate discriminating factors amongst group of firms. This is obviously crucial to provide reasons why some firms have better e-business alignment than other firms.

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Endnotes

¹ The guideline specifies small firm as firm with full time employees (FTEs) of between 5 and 50 (manufacturing-based) or between 5 and 20 (service-based). Meanwhile, a medium category encompasses firm with FTEs between 50 to 150 (manufacturing-based) or 20 to 50 (service-based).

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