

## **FACILITATORS OF INTERNET PROMOTION (E-BROCHURE) ADOPTION BY NON-PROFIT ORGANISATIONS**

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### **ABSTRACT**

*Internet promotion, otherwise e-brochure (EB) or partial e-commerce adoption by non-profit organisations denotes the use of the Internet to provide business and service related information by academic institutions (as in the present study), non-profit organisations, religious organisations, and government agencies to reduce their expenses or to improve their operations and customer service. A field survey of Malaysian universities was conducted to determine the key factors that facilitate the adoption of non-business EB. Since EB adoption decision is a strategic one, a comprehensive list of potential facilitators for the strategic use of information technology (IT) was derived from extant literature and used in collecting data from 65 schools and centres in five public universities in Kota Kinabalu and Kuala Lumpur, Malaysia. The data were factor-analysed to determine the key underlying dimensions of facilitators. On the basis of the resulting five dimensions namely, relative advantage orientation, network orientation, information efficiency orientation, innovativeness orientation, and competitiveness orientation, regression analysis was done to determine the impact of the five dimensions on non-business EB adoption.*

**Keywords:** Internet promotion, E-brochure, Non-profit organisations, Malaysia

### **INTRODUCTION**

E-brochure (EB) describes the manner in which promotion takes place over networks, mostly the Internet. It is the process of electronically promoting goods, services, and related information. EB is often referred to as partial e-commerce. Describing how e-commerce has significantly impacted the world, business, professions, and of course people, Clinton and Gore (1997) maintain that "we are on the verge of a revolution that is just as profound as the change in the economy that came with the industrial revolution." Some organisations make full use of e-commerce systems while others make only a partial use.

To differentiate between partial and full non-business e-commerce adoption, the uses organisations make of their applications are usually considered. Full e-commerce refers to the use of the application for all of the following tasks:

(1) providing business and service related information (mere web presence or EB); (2) online service ordering/reservation; (3) online payment; and (4) online/offline delivery. Partial e-commerce is the use of the application for the first (1) purpose. This research focuses on the non-business partial e-commerce. Being the most uncommon type of (partial) e-commerce (Turban, King, & Chung, 2000), an understanding of non-business EB usage and key usage drivers will help to create a favourable attitude and environment for adoption in Malaysian not-for-profit making organisations. Although there is significant research on partial and full e-commerce, all the efforts focus on profit organisations. Among the local studies of business e-commerce are Jantan, Ndubisi, and Ong (2003), which focuses on large organisations, and Ramayah, Dahlan, Teck, and Aafaqi (2003), which dealt with small and medium-size businesses. Nevertheless, there is serious dearth of research on non-profit organisations like institutions of higher learning. Even, most studies concentrated on the marketing and bottom line contributions with very little attention to other non-monetary factors that could be influential. In this research, a broad gamut of factors drawn from extant information science literature were considered, and analysed for factor and determinant structures.

## **LITERATURE REVIEW**

E-commerce could be classified based on the nature of transaction. Turban et al. (2000) distinguished the following types:

1. Business-to-Business (B2B) – This is the most common type of e-commerce today; it includes electronic market transactions between organisations.
2. Business-to-Consumer (B2C) – These are retailing transactions with individual shoppers.
3. Consumer-to-Consumer (C2C) – In this category, consumers sell directly to consumers.
4. Consumer-to-Business (C2B) – This category includes individuals who sell products or services to organisations, as well as individuals who seek sellers, interact with them, and conclude a transaction.
5. Intrabusiness (organisational) e-commerce – In this category fall all internal organisational activities, usually performed on Intranets that involve exchange of goods, services, or information.

6. Non-business E-commerce – This includes non-business institutions such as academic institutions, not-for-profit organisations, religious organisations, and government agencies using various types of e-commerce to reduce their expenses or to improve their operations and customer service.

E-commerce adoption and use continues to grow rapidly around the world. The Internet B2B space is gaining much attention, with valuation for publicly traded B2B companies escalating rapidly. The B2C size is also growing rapidly, although very little (if at all) is understood of its non-business model. In Malaysia, one of the fastest growing economies of East Asia, the need to study e-commerce (partial and full) adoption and adoption facilitators in non-business organisations is critical as it will help to create a more favourable environment for greater use of e-commerce as a tool for resilience and success in the global environment, even as the nation positions as an education tourist centre. In this paper, we examine first the partial e-commerce or EB model.

Today, the Internet is a major driving force of change in the global market place (Kamel, 2000), promising to improve the way people live, work and study. Forecasts that predict the size of online trading revenues in the near future vary from a few hundred billion to a few trillion dollars (van Hooft & Stegwee, 2001; Jantan et al., 2003). The Internet development has indeed created a new phenomenon in the new millennium that changes the ways both business and non-business establishments conduct their affairs. The Internet not only created a new market place but also serves as a medium of communication that reaches millions of people throughout the world. The rapid growth of Internet audience worldwide makes Internet an interactive medium and a popular advertising media that is becoming an integral part of integrated marketing communication. The increasing popular use of database marketing for the mass market has enabled Internet promotion and other direct marketing methods such as telemarketing, e-marketing, etc.

The Internet presents a fundamentally different environment for marketing activities than traditional media, conventional marketing activities are being transformed, as they are often difficult to implement in their present form. This implies that in many cases, these marketing activities have to be reconstructed in forms more appropriate for the new medium. This process of transformation and reconstruction of marketing and communication activities in information intensive environments has been noted by numerous researchers (Glazer, 1991; Reid, 1991; Blattberg, Glazer, & Little, 1994; Stewart & Ward, 1994; Venkatesh, Sherry, & Fuat, 1993; van Raaij, 1993). Reid (1991) for example, argued that in order to maintain a virtual community on the Internet, users have had to deconstruct and reconstruct the non-verbal communication that exists in

interpersonal communication by typing their feelings out in ascii and constructing a notational system to convey emotion.

From the marketing perspective, the Internet transforms the marketing function in an unprecedented manner. In an e-commerce marketing strategy, information is the key viable product. Rayport and Sviokla (1994) considered transaction where the actual product has been replaced by information about the product and Evans and Wurster (1999) discussed navigation as its own business. In the physical world, a shopper who wants to buy something has to manually sift through the millions of choices. This usually requires the shopper to travel to a store or a university campus (as in the present case) and inspect the products or courses, facilities, research, etc. Unless they want to travel to various institutions, they are limited to the information at one particular school. However, the Internet has allowed customers to search more comprehensively and at virtually no cost.

With respect to distribution, Klein and Quelch (1996) discussed the global reach of the Internet in creating a larger market place and the strong growth of a network's utility based on Metcalf's law. Evans and Wurster (1999) defined reach as the number of eyeballs that view a Web site. According to Evans and Wurster, the navigational Web sites will allow small niche producers easier access to the markets. They will be able to skip over parts of the value chain that traditional suppliers have historically relied on for competitive advantage. Jantan et al. (2003) found that e-commerce was drastically reducing the indispensability of intermediaries. Chatterjee and Narasimhan (1994) observed that as a distribution channel, the web possesses extremely low entry and exit barriers for firms, the capability not only to keep pace with market change, but also accelerate it, and increasing irrelevance of distribution intermediaries. Glazer (1991) noted that in the presence of higher information intensity, channel power shifts in favour of consumers and a breakdown occurs in formal distinctions between producer and consumer. Similarly, non-business organisations can use the Internet technology to by-pass middlemen.

With regard to pricing, it has been argued that the Internet will lead to increase price competition and the standardisation of prices. Klein and Quelch (1996) pointed out two counteracting effects of the Internet on price. First, a supplier can use the technology to discriminate pricing between consumers, for example, in different countries. Also, the ability to compare prices across all suppliers using the Internet and online shopping services will lead to increase price competition (Klein & Quelch, 1996). Since, the price of providing Internet-based services often contains little or no marginal costs, the Internet is apt to enable customers to compare fees, access information on discounts, make payment for services reserved or received, etc., which is cheaper than ever before. Academic

institutions can also disseminate information on scholarships and other awards for example, more cheaply by using the Internet technology.

Promotion is the act of informing or reminding consumers about a specific product or brand (Madura, 2004). Suppliers and producers of products and services have certain advantages when promoting products and services on the Internet. Evans and Wurster (1999) discuss these advantages in relation to the richness of information they can provide consumers. The Internet provides a low cost way for them to build a direct link with the consumer. They can use their traditional sources of consumer information in addition to the information that is easily collected from e-commerce sites (e.g. sales information, customer demographics). Such rich product information is most useful when the consumer is evangelistic, enthusiastic and the product has a strong connotative context (Evan & Wurster, 1999).

Other extant e-commerce and e-business literature beside the ones considered above include, Ainscough and Lockett (1996), Raman and Leckenby (1998), Avlonitis and Karayanni (2000), Friedman, Kahn, and Howe (2000), Shneiderman (2000), Mahajan and Venkatesh (2000), Cheng, Li, Love and Irani (2001), Bauer and Colgan (2001), Chellappa and Pavlou (2002), Kirchmer (2004), however, none of these efforts have considered the issue of e-commerce in a non-business setting dealt with in the present study.

### **Facilitating Factors**

Information systems researchers have suggested a number of factors and models for evaluating technology adoption and usage behaviours of individuals and organisations. Unfortunately, none of these models and their replications and adaptations has addressed the issue of e-commerce usage for non-business purposes or usage by non-profit organisations. E-commerce adoption decision in organisations is clearly a strategic one. Since strategic information technology (IT) applications can have a significant impact on the firm's strategy, and since there is evidence that some firms are much more successful than others in developing them (King, Grover, & Hufnagel, 1989), studies of the factors that facilitate or inhibit the development of such applications are of great importance.

Organisational facilitators can be defined as factors that positively influence the ability of an organisation to exploit information resources; information resources include both IT and information (King et al., 1989). Empirical studies of facilitators of strategic use of IT are incomprehensive, as majority concentrate on a fairly small set of potential facilitators. Many focus on only one variety of system. Only a few studies have attempted to determine empirically and rigorously the underlying structure of the important facilitators that can aid in the

understanding of the situational and process elements related to the development of strategic IT applications (King et al., 1989). For non-business e-commerce in particular, which adoption decision is also a strategic one, there is no known study.

Some of the few intuitive or prescriptive works on facilitators and inhibitors include Neo (1988), Reich and Benbasat (1990), King and Sabherwal (1992), and King and Teo (1994, 1996). Neo (1988), in his content analysis of firms that use strategic IT applications found that there are ten key dimensions that facilitate the use of strategic IT applications: alignment with business planning, communication between Information Science (IS) and management, consideration of IS role, competitive pressure, internal needs a customer needs, strength in IT, extensive computer facilities, management vision and support, and consultants' recommendation. Reich and Benbasat's (1990), study of factors influencing the success of customer-oriented strategic systems (COSS) proposed different dimensions for factors influencing COSS development, adoption, and competitive advantage. Development was proposed to be influenced by the sponsoring company (including corporate level and IS function characteristics), the industry, and the COSS project itself. COSS adoption, they showed, was influenced by the COSS itself (including its development, functions, and support), the industry, and its customers. Competitive advantage from COSS was influenced by the sponsoring company, the COSS itself (including functions and supports), the underlying product supported by COSS, the industry, and its customers.

In a study of factors affecting strategic information systems applications, King and Sabherwal (1992), considered three dimensions: the environmental context, the organisational context, and the IS functional context. Similarly, in a study of facilitators and inhibitors for the strategic use of IT, King and Teo (1994), utilised three different dimensions: internal factors, perceived needs, and external factors. More recently, Richardson and Ndubisi (2003) addressed the influence of system's characteristics on its strategic use. Since non-business Internet promotion or partial e-commerce adoption decision is a strategic one, the list of dimensions of facilitators for strategic use of IT compiled from prior studies was adapted from King and Teo (1996) and examined in the present work.

## **METHODOLOGY**

Executives namely, directors of centres, deans of schools, and other senior administrators in five public universities in Kuala Lumpur and Kota Kinabalu in Malaysia were surveyed to gain information on the extent of use of the Internet in their various departments to promote services and information, as well as the

usage drivers. The unit of analysis was at the departmental level, as each centre/school holds the onus of designing and maintaining its own web page, as well as managing the activities that go on in the home page. These pages are usually maintained by webmasters appointed by the respective schools or centres. Each of the 165 deans and directors in the five universities that accepted the invitation to participate in the survey was sent a copy of the research questionnaire. Out of this, 65 usable responses were received, which translates to 40% response rate.

In order to achieve the two main objectives of the research that is, to identify a comprehensive list of potential facilitators from prior research and practitioner literature, and to examine their impacts on non-business Internet promotion or EB adoption, a list of facilitators for the strategic use of IT from various sources was adapted from King and Teo (1996). The list includes all facilitators from previous work as shown in Table 2. From this list, a questionnaire was prepared using a five-point Likert-type scale ranging from 1 "greatly unfacilitative" to 5 "greatly facilitative". The scale also had a column marked "not applicable" to allow for items that are not relevant to a particular company. In line with, and ICOLC (1998), adoption was measured based on the job tasks undertaken with the e-commerce application. System usage for the sole purpose of promoting services is regarded as e-brochure/e-promotion (or partial adoption). The questionnaire was pre-tested with five deans of schools and directors of centres and modified appropriately. Based on the resulting dimensions, regression analysis was done.

Four basic regression assumptions were met: (1) linearity of the phenomenon measured; (2) constant variance of the error terms (homoscedasticity); (3) independence of the error terms; and (4) normality of the error term distribution. Firstly, linearity was assessed through an analysis of residuals and partial regression plots, which does not exhibit any nonlinear pattern to the residuals, thus ensuring that the overall equation is linear. The next assumption deals with the constancy of the residuals across values of the independent variables. The analysis is again through examination of the residuals, which shows no pattern of increasing or decreasing variations in the residuals. The third assumption is about the effects of carry over from one observation to another, thus making the residual dependent. It is confirmed that there is no auto-correlation problem (i.e. the error term in the independent variables are not correlated). This was checked by looking at the Durbin-Watson values to confirm that they fall within the acceptable region of 1.5 and 2.5, as any value outside this range indicates the presence of auto-correlation problem in the regression. For the fourth assumption, a check for normality of the error term was done by a visual examination of the normal probability plots of the residuals, and the regression variate was found to meet the assumption of normality. Outliers (i.e. cases falling at the outer ranges of the distribution that may be potentially biasing the results),

were checked using a threshold of three standard deviations for the residuals, which is appropriate for our sample size (Hair, Anderson, Tatham, & Black, 1998) to identify outliers. All observations outside this range ( $3\sigma$ ) were considered outliers and were duly dropped from the regression.

The assumption of independence of the independent variables in regression analysis is critical for an explanatory model. In this research, the degree of multicollinearity and its effect on the results is not problematic. To ensure this, the two-part process (condition indices and the decomposition of the coefficient variance) was employed, comparisons were made, and conclusions drawn from the variance inflation factor (VIF) and tolerance values. According to Hair et al. (1998) the condition indices and VIF not exceeding threshold values of 30 and 10, respectively are most commonly used. There is no high correlation between the independent variables in the regression as all condition indices and VIF fall within the acceptable treshold.

## RESULTS AND IMPLICATIONS

### Demographic Profile of Respondents

Table 1 shows the demographic profile of the respondents to the survey. All the centres and schools represented have been adopting EB for more than five years.

TABLE 1  
DEMOGRAPHIC PROFILE OF RESPONDENTS

Field of specialisation	Percents	Age of respondents	Percents
Management Science	35.4	Below 30 years	26.2
Information Science	15.4	31–40 years	30.8
Social Science	12.3	41–50 years	29.2
Physical Science	12.3	51–60 years	13.8
Engineering	4.6	Above 60	0.0
Others	20.0		
Job title	Percents	Gender	Percents
Dean of School	29.2	Male	66.2
Centre Director	6.2	Female	33.8
Unit Head	61.5		
Others	3.0		
Job experience	Percents	Number of students/clients	Percents
Below 5 years	21.5	Below 300	23.1
5–10 years	26.2	300–500	16.9
11–20 years	21.5	501–1000	3.1
21–30	27.7	1001–2000	15.4
Above 30 years	3.1	2001–3000	15.4
		Above 3000	26.2

(Continued on next page)



TABLE 1 – (Continued)

Years of computer experience	Percents	Number of employees	Percents
Below 5 years	3.0	Below 5	12.3
5–9 years	37.0	5–50	53.8
10–14 years	37.0	51–100	15.4
15–20 years	21.6	101–300	9.2
Above 20 years	1.5	301–500	7.7
		Above 500	1.5

### Validity and Reliability

A list of facilitators for the strategic use of IT was adapted from King and Teo (1996), and were disposed at different stages of the factor analysis to arrive at the critical factors. The list includes all facilitators from previous work (Table 2). In order to determine the key dimensions of facilitators for non-business partial e-commerce, an exploratory factor analysis was carried out. A principal components analysis (PCA) was used for data reduction to examine the factor structure and help the measures conform to recommended levels of reliability.

TABLE 2  
THE ORIGINAL LIST OF ITEMS, ADAPTATION  
SOURCE/S AND THEIR DISPOSITION

Items	Disposition by factor analysis
1. Strong market position (King et al., 1989)	F5
2. Strong IT leadership (King et al., 1989; Neo, 1988)	F1
3. Strong technical support staff	F2
4. Strong IT planning capability (King et al., 1989; Neo, 1988)	1 <sup>st</sup> factor analysis
5. Extensive computer facility (King et al., 1989; Neo, 1988; 1989; Sullivan, 1985)	1 <sup>st</sup> factor analysis
6. Well defined management objectives (King et al., 1989)	1 <sup>st</sup> factor analysis
7. Economies of scale for use of e-commerce (Copeland & McKenney, 1988)	1 <sup>st</sup> factor analysis
8. Extensive information distribution network (Porter & Mille, 1985)	F2
9. Experience with IT (Reich & Benbasat, 1990)	3 <sup>rd</sup> factor analysis
10. Top management vision and support (Zmud, 1984)	2 <sup>nd</sup> factor analysis
11. Communication between IS and management (Nilakanta & Scamell, 1990)	F2
12. Integration of e-commerce with business planning (Johnston & Carrico, 1988)	F2
13. Innovation capability (Clemons, 1986)	F4
14. Perceived importance of e-commerce (Jarvenpa & Ives, 1990; 1991)	F1
15. Tangible benefits of e-commerce application (Copeland & McKenney, 1988)	F1

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TABLE 2 – (Continued)

Items	Disposition by factor analysis
16. Favourable image/reputation of organisation/unit (Ives & Learmonth, 1984)	F1
17. Foreseeable increase in market share (Copeland & McKenney, 1988)	1 <sup>st</sup> factor analysis
18. Strategic fit to organization/unit's objectives (Copeland & McKenney, 1988)	2 <sup>nd</sup> factor analysis
19. Adequate knowledge about information assets/opportunities (Jarvenpa & Ives, 1990)	1 <sup>st</sup> factor analysis
20. Willingness to explore new ideas (Copeland & McKenney, 1988)	1 <sup>st</sup> factor analysis
21. Able to identify e-commerce opportunities (Copeland & McKenney, 1988)	F1
22. High information intensity of services (Porter & Miller, 1985)	F1
23. High information intensity in organization's value chain (Porter & Miller, 1985)	2 <sup>nd</sup> factor analysis
24. Presence of champion for e-commerce (Beath & Ives, 1988)	1 <sup>st</sup> factor analysis
25. Perceived need to improve/maintain market position (Copeland & McKenney, 1988)	1 <sup>st</sup> factor analysis
26. Perceived need to improve/maintain image/reputation (Copeland & McKenney, 1988)	F1
27. Perceived need to improve customer service (Ives & Learmonth, 1984)	1 <sup>st</sup> factor analysis
28. Perceived need to improve information distribution network (Ives & Learmonth, 1984)	2 <sup>nd</sup> factor analysis
29. Perceived need to improve productivity/efficiency (Porter & Miller, 1985)	5 <sup>th</sup> factor analysis
30. Perceived need to improve/monitor operations (Porter & Miller, 1985)	1 <sup>st</sup> factor analysis
31. Perceived need for change (Anderson & Paine, 1975;)	F4
32. Perceived need to lower cost (Zmud, 1984)	F5
33. Perceived need to facilitate paper work (Copeland & McKenney, 1988)	F3
34. Perceived need to store/process information (Porter & Miller, 1985)	F3
35. Perceived need to satisfy customers' needs and demands (Ives & Learmonth, 1984)	5 <sup>th</sup> factor analysis
36. Perceived need to keep up with new technology (Copeland & McKenney, 1988)	2 <sup>nd</sup> factor analysis
37. Perceived need for uniqueness (King et al., 1989)	5 <sup>th</sup> factor analysis
39. Perceived need to differentiate products/services (Porter & Miller, 1985)	F1
40. Pressure from competition (Johnston & Carrico 1988; Neo 1988)	3 <sup>rd</sup> factor analysis
41. Favourable government policy (Gurbaxani et al., 1990)	2 <sup>nd</sup> factor analysis
42. Competitive importance of e-commerce to industry (Porter & Miller, 1985)	2 <sup>nd</sup> factor analysis
43. Favourable market growth (Copeland & McKenney, 1988)	4 <sup>th</sup> factor analysis
44. Favourable economic growth (King et al., 1989)	F1
45. Consultant's recommendation for use of e-commerce (Neo, 1988)	1 <sup>st</sup> factor analysis

Items loadings are summarised and presented in Table 3. Based on parsimonious sets of variables, guided by conceptual and practical considerations, the study accepted factor loadings of 0.50 and above – this level is considered practically

significant (Hair et al., 1998). The oblique factor rotation was employed for this analysis because it represents the clustering of variables more accurately (Hair et al., 1998), and because the factors need not be uncorrelated and may even be conceptually linked, which requires correlation between the factors (Hair et al., 1998). This technique of rotation is more suitable for this study than the orthogonal rotation, which keeps factors uncorrelated throughout the rotation process. A total of 18 items out of the original 45, loaded on five factors. Only items with loadings of at least 0.50 were retained. Although the items used in this study were taken from prior studies, many of them were not validated in this study, which focuses on non-business context and the Malaysian local scenario. The different contexts and environments where the previous studies and the current one were conducted may plausibly explain the differential loadings and consequent poor validity of some of the items. This outcome also gives credence to the earlier stated need for the study of e-commerce in non-business organisations.

The results of the key dimensions, items, variance, and communalities are summarised in Table 3. Total variance explained by the factors is approximately 75%. High communality values were observed for all the variables, indicating that the total amount of variance an original variable shares with all other variables included in the analysis is high. Although the observed patterns of item loadings are similar for both Oblique rotation (adopted in this study) and Varimax (alternative technique), giving us grounds to assume that the instruments are consistent, the internal consistency of the instrument was further tested via reliability analyses. Reliability analyses were conducted on the factors extracted, each yielding a high Cronbach's alpha coefficient. The alpha values for the construct's independent and dependent dimensions are 0.93, 0.86, 0.78, 0.68, 0.78, and 0.97, respectively.

From the result of factor analysis, five factors were identified as facilitators of non-business EB adoption. These factors are denoted as (1) relative advantage orientation, (2) network orientation, (3) information efficiency orientation, (4) innovativeness orientation, and (5) competitiveness orientation. The mean values of the items are high, indicating that they are highly rated in terms of their importance to adopters. By identifying these factors, the first and most important objective of this research is accomplished. It is clear from literature that there is no known empirically identified key dimensions of facilitators for non-business e-commerce. Thus, the contribution of this research is important.

TABLE 3  
KEY DIMENSIONS, ITEMS, AND COMMUNALITIES

	Loadings (mean)	Communalities
<b>F1 – Relative advantage orientation</b>		
1. Perceived importance of e-commerce	0.86 (3.85)	0.813
2. Tangible benefits of e-commerce application	0.89 (3.74)	0.824
3. Favourable image/reputation of organisation	0.80 (3.98)	0.723
4. Able to identify/benefit from e-commerce opportunities	0.84 (3.75)	0.743
5. Assistance with high information intensity of service	0.77 (3.85)	0.785
6. Perceived need to differentiate products/services	0.71 (3.58)	0.732
7. Favourable economic/financial growth	0.66 (3.71)	0.643
8. Strong IT leadership (Eigenvalue = 7.97; Variance = 44.29%)	0.62 (3.98)	0.709
<b>F2 – Network orientation</b>		
9. Strong technical support staff	0.91 (3.97)	0.818
10. Extensive information distribution network	0.67 (4.00)	0.721
11. Communication between IS and management	0.74 (3.98)	0.756
12. Integration of e-commerce with business planning (Eigenvalue = 1.70; Variance = 9.42%)	0.86 (3.69)	0.804
<b>F3 – Information efficiency orientation</b>		
13. Perceived need to facilitate paperwork	0.84 (4.06)	0.784
14. Perceived need to store & process information (Eigenvalue = 1.45; Variance = 8.06%)	0.91 (4.26)	0.850
<b>F4 – Innovativeness orientation</b>		
15. Innovation capability	0.82 (4.18)	0.672
16. Perceived need for change (Eigenvalue = 1.30; Variance = 7.20%)	0.54 (4.09)	0.567
<b>F5 – Competitiveness orientation</b>		
17. Strong market position	0.66 (3.75)	0.742
18. Perceived need to lower cost (Eigenvalue = 1.05; Variance = 5.83%)	0.86 (3.86)	0.779
<b>Total Variance = 74.79%</b>		

*Note:* The figures in bracket are the mean of the item

The first underlying dimension (F1) of the facilitators called "relative advantage orientation" comprises items that are related to beneficial outcomes such as perceived importance of e-commerce, tangible benefits of e-commerce application, favourable organisation's image/reputation, ability to identify and/or benefit from e-commerce opportunities, assistance with high information intensity of services, perceived need to differentiate products and/or services,

favourable economic growth, and strong IT leadership. The visibility of Internet promotion or EB depends on its perceived importance, tangible benefits, and other relative advantages, a plausible explanation for the emergence of this factor.

The second dimension (F2) consists of items that relate to the organisation's "network orientation". These include: strong technical support staff, extensive information distribution network, communication between IS and management, and integration of e-commerce with business planning. Generically, IT is often used to link up with customers, suppliers, etc. and to enhance access to experiential knowledge of network members (Laudon & Laudon, 1997; Cragg & King, 1993).

The third dimension (F3) consists of items that relate to "information efficiency orientation" and includes: perceived need to facilitate paper work and perceived need to store and process information. One key salience of IT is its ability to speed up information collection, storage and dissemination cycle. EB can be of immense benefit to both suppliers and consumers of services based on its ability to provide detail information about an offering. It can be used to facilitate paper work within the organisation and outside the organisation with clients, students, customers, suppliers, and other publics by eliminating or reducing the use of slower traditional methods of promotion.

The fourth dimension (F4) is made up of items that relate to the firm's innovative needs and capability – "innovativeness orientation." Dos Santos et al. (1993) found that innovative IT investments increase a firm's value while non-innovative IT investments do not. Richardson and Ndubisi (2003) found that more innovative users make greater usage of IT. This implies that the need to innovate and the organisation's capability to innovate may have link with EB adoption.

The fifth and last dimension (F5) is made up of items that relate to the firm's "competitiveness orientation", which includes strong market position and perceived need to lower costs. Many firms have used low cost production as a competitive strategy and to strengthen market position and many more are beginning to do so. Moreover, in order for a firm to survive in its competitive environment, it is generally necessary to improve or maintain at least a fairly strong market position, lower cost, and/or improve service.

### **Examination of Relationships**

Employing the multiple regression analysis, the study examines the presence of statistical relationships among the construct's dimensions. As observable from Table 4, the five organisational orientations contribute significantly ( $F = 11.83$ ;  $p < 0.001$ ) and predict 51% of the variations in EB adoption.

TABLE 4  
INFLUENCES ON EB OR PARTIAL E-COMMERCE ADOPTION

Dimensions	Beta coefficients
Relative advantage orientation	0.188
Network orientation	0.399*
Information efficiency orientation	0.340*
Innovativeness orientation	-0.034
Competitiveness orientation	-0.011

R2 = 0.509 F = 11.83 Sig. F = 0.000

\* p < 0.01

Details of the results show that there is significant relationship between an organisation's network orientation, information efficiency orientation and EB/e-promotion adoption. There is no significant relationship between relative advantage orientation, innovativeness orientation, competitiveness orientation and EB adoption at 5% significance level. This result goes to show that the three variables are not significant drivers of EB or the use of Web site solely for presentation of services information.

Relative advantage does not determine partial e-commerce adoption (or mere Web presence). Kotler (2003) described relative advantage as the degree to which an innovation appears superior to existing product. This is the degree to which an innovation is perceived by a potential adopter as being better than the idea it supersedes (Rogers, 1995). The degree of relative advantage may be measured in economic terms as well as in social prestige, and satisfaction. Partial usage or mere usage of system for promotional activities is not driven by relative advantage. Therefore, those executives who use their systems as mere catalogue or brochure may never realise the full benefits of the application. This concern has been expressed earlier by researchers (e.g. Weiner, 1993; Johansen & Swigart, 1996) who lamented that even as advances in technology continue at an enormous speed, the use of these technologies has plummeted below expectations. Landauer (1995) and Sichel (1997), have suggested that such low usage of installed systems has been a possible key explanation for the "productivity paradox" or the low productivity gains from IT investments.

Network orientation is an important adoption factor of Internet promotion. The large clientele base of universities and at the same time the uniqueness of individual client's needs, demand the use of powerful broadcast approaches that are customisable to send the same messages to all members of the large audience. The Internet enables the organisation to engage in customer-specific actions – a broadcast to an audience of one, and also allows the customer to control the degree of customisation by taking action to set the level of

customisation desired. King and Teo (1996) found a related but narrowly defined construct "top management guidance" to be influential.

Information efficiency also determines EB usage. Online transaction requires the transmission of impersonal and personal information from one party to another, some of which may be very confidential. This calls for the need for an efficient means of handling such time and security sensitive information. Moreover, the speed and accuracy of collecting, storing, and disseminating information can be enhanced through EB. Since EB allows the organisation to promote activities more efficiently, it is logical that information efficiency orientation associates with adoption. A related construct was earlier identified by King and Teo (1996) as a salient factor of strategic use of generic IT.

Innovativeness and competitiveness have no significant association with EB adoption. Adoption neither reflects the leader's innovativeness nor quest to out-compete rivals. The lack of rivalry among the universities in Malaysia as stated earlier explains why adoption may not be for the purpose of overcoming competition. Also EB or Web site is no longer an innovation, as all the respondents have a Web site, therefore innovativeness does not explain adoption. These findings differ from King and Teo (1996) which found strong competitive position and innovative needs as determinant factors. This discrepancy is understandable as both studies differ in context; while King and Teo focuses on business organisations, this study concentrates on Malaysian public universities (not-for-profit-making organisations) where there is no competition at all.

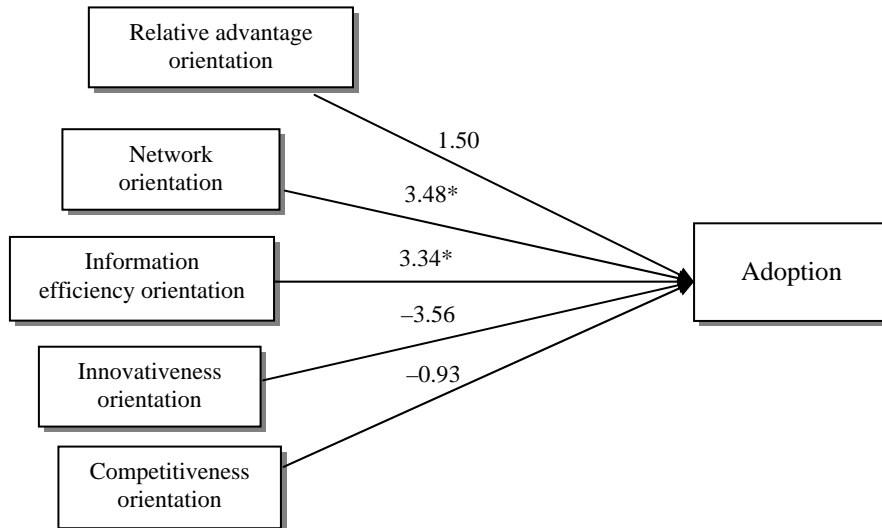


Figure 1a. The schema of the research model with t-values

## **LIMITATIONS AND FUTURE RESEARCH**

A setback to this research is the lack of literature on non-business e-commerce. All available literature has dwelt within the domain of profit-oriented entities for example, business to business, business to customer, customer to business, and customer to customer. Since there is no readily available non-business e-commerce literature, the study had to rely on the generic e-commerce literature.

Secondly, since the respondents in this survey are located in two cities, the research faces a potential for regional clustering bias. Although this issue is neither critical nor defeats the purpose of the study since more than 80% of the public universities in Malaysia are located in the two cities, it does hinder generalisability of the outcome. Future research should attempt a nation-wide survey that will include all the public universities in Malaysia.

Another interesting direction for future research will be a comparative study of facilitators of EB adoption between for profit-making businesses and non-business organisations to see if similar or different factors drive adoption of internet promotional activities of these organisations. The result of such comparison will assist in determining effective strategies that is more suitable for the different business settings.

## **CONCLUSIONS**

The results of the exploratory factor analysis show five key dimensions (relative advantage orientation, network orientation, information efficiency orientation, innovativeness orientation, and competitiveness orientation) as the parsimonious set. These five orientations are potential drivers of Internet promotion or EB adoption by non-profit organisations such as academic institutions. This is an important contribution to theory since there is no known empirical research on the key dimensions of facilitators for e-commerce usage in not-for-profit-making organisations especially in Malaysia.

Furthermore, some of the outcomes of this study corroborate the findings of prior research (e.g. King & Teo, 1996), while others do not. For example, consistent with the latter, the results of relationship test suggest that network orientation, and information efficiency orientation are significantly associated with partial e-commerce adoption or adoption for mere promotional purposes. Therefore, non-business establishments and policy makers wishing to enhance the adoption of Internet promotion, EB, or partial e-commerce may focus on the two factors. Relative advantage, innovativeness and competitiveness orientations have no



statistical relationship with partial adoption of non-business e-commerce. Further investigation of these factors is suggested as research in this area is pivotal and inconclusive.

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