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Critical Success Factors Influencing Adoption of Internet Technology by MSC & Non-MSC Companies

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ABSTRAK

Internet dipercayai mengubah corak strategi perniagaan dibentuk dalam dunia korporat. Ia juga bukti sebagai alat strategik yang paling efektif dan berpengaruh dalam abad ini dengan menghubungkan ribuan syarikat dan jutaan orang setiap minit. Kertas kerja ini mengemukakan faktor-faktor utama yang digunakan oleh syarikat MSC dan bukan MSC dalam penerimaan teknologi Internet. Lima faktor organisasi dan dua faktor pasaran digunakan dalam kajian ini. Hasil kajian ini menyokong hipotesis bahawa di antara syarikat MSC dan bukan MSC, wujud perbezaan pendapat yang nyata terhadap enam faktor iaitu tanggapan faedah langsung, kesesuaian organisasi, kerumitan teknikal, tekanan rakan perniagaan, sokongan organisasi, dan tanggapan faedah tidak langsung. Kesemua faktor-faktor di atas selain daripada kerumitan teknikal menunjukkan bahawa syarikat bukan MSC adalah lebih dipengaruh oleh faktor–faktor ini daripada syarikat MSC. Satu lagi faktor iaitu tekanan persaingan didapati bukan faktor pengaruh.

ABSTRACT

The Internet is transforming the way in which business strategies are formulated in the corporate world. Indeed, it is proving to be the most effective and influential strategic tool of the century by connecting thousands of companies and millions of people every minute. This paper highlights the salient factors influencing the adoption of Internet technology by MSC and Non-MSC companies. Five organisational and two marketplace factors were used in this study. The final analysis confirmed that MSC and Non-MSC companies were influenced by six factors — perceived direct benefits, organisational compatibility, technical complexity, trading partner pressure, organisational support, and perceived direct benefits. All of the factors above except for technical complexity proved that Non-MSC companies were more affected by these factors than MSC companies. Another factor, competitive pressure, was not an influential factor.

Keywords: Electronic commerce, Internet technology, World Wide Web

INTRODUCTION

In Malaysia, the Internet is increasingly popular among local and multinational companies as a medium to advertise their business and enhance corporate performance on the electronic superhighway. The Malaysian government has provided several incentives to encourage the growth of multimedia companies For instance, the Multimedia Super Corridor (MSC) is a pilot project to harmonise Malaysia with the global forces shaping the information age. It is

also a perfect environment for companies wanting to create, distribute and employ multimedia products and services. Malaysians cannot avoid the MSC and Internet technologies as both are already here. Companies have to prepare themselves to exploit the technologies of the Internet. In short, Internet technologies will become a way of life in Malaysia through the realisation of the MSC.

However, limited research had been done to identify the critical success factors (CSFs) use in adopting new innovations. In particular, information on salient factors that influence organisations' perception towards Internet technology adoption and its effect on both MSC and Non-MSC companies.

This paper is organised as follows: the next section presents the objective for this study, followed by a brief review of the literature. Subsequently, the hypotheses, methodology and results are presented. This is followed by an analysis of the hypotheses and discussion that relates the findings to the original theory.

OBJECTIVE OF STUDY

One of the most difficult challenges facing senior information systems (IS) managers is establishing a flexible IS infrastructure that will allow their organisations to successfully compete (Brancheau and Wetherbe 1996; Neiderman *et al.* 1991). Senior IS managers must work closely with functional business managers to establish an IS infrastructure that effectively supports existing systems, while remaining responsive to the constantly changing IS needs of the organisation (Stephens 1992). Establishing a stable IS infrastructure is not an easy task; numerous critical success factors, both internal and external to the firm, influence their decisions.

In recent years, the problem of establishing a stable IS environment is affected by a rapidly changing technical environment. The IS manager must decide whether to adopt emerging technologies based on both internal and external factors and on the firm's business objectives. Internal factors include top management support (Gordon and Gordon 1992), perceived benefits (Banerjee and Golhar 1994), technical compatibility (Iacovou *et al.* 1995), complexity (Rogers 1983), and organisational compatibility (Grover and Teng 1992). These impact both the type of technology adopted and the diffusion of the technology throughout the organisation. As firms attempt to leverage investment in information technology, the IS manager must determine whether emerging technologies support the firm's business plans and are compatible with the existing infrastructure. Several factors that are external to the organisation also impact the adoption decision. These include market competitiveness (Kunnathur *et al.* 1996) and pressure from other trading partners (Grover 1993). Thus, the objective of the study is to find answers to the following research questions.

RQ1: MSC companies that perceive greater benefits from adopting Internet will more likely adopt Internet technology than Non-MSC companies

RQ2: MSC companies that perceive Internet technology as compatible with their existing beliefs and work practices will more likely adopt Internet technology than Non-MSC companies.

RQ3: MSC companies that perceive Internet technology as compatible with their existing information systems environment will more likely adopt Internet technology than Non-MSC companies.

RQ4: MSC companies that perceive the adoption of Internet technology as a less complex process will more likely adopt Internet technology than Non-MSC companies

RQ5: MSC companies that receive pressure from their key trading partners to adopt Internet technology will more likely adopt Internet technology than Non-MSC companies.

RQ6: MSC companies with top management support for the adoption of Internet technology will more likely adopt Internet technology than Non-MSC companies.

RQ7: MSC companies that are in a highly competitive environment will more likely adopt Internet technology than Non-MSC companies.

LITERATURE REVIEW

On August 1, 1996, Prime Minister Datuk Seri Dr. Mahathir Mohamad announced the creation of a new urban zone designed specifically to enhance and develop a world-class multimedia industry and provide all necessary services to that industry. The MSC will be a test site that seeks to look into the possibility of integrating IT in everyday life, from business to government and to individuals. The MSC will incorporate not only infrastructure but also the business and legislative aspects of IT. It will not only benefit Malaysia but also the rest of the world (Computimes Series 1997-2000). This initiative is important for more reasons than one. From an economic point of view, MSC is important in helping Malaysia to achieve Vision 2020, which is the deadline set for the country to achieve fully developed nation status.

Presently, the country is undergoing a change from an industrial to information age and the MSC is providing a perfect environment for companies wanting to create, distribute and employ multimedia products and services. Multimedia Development Corporation (MDC) was set up to promote, implement, co-ordinate and manage the MSC (Computimes series 1997-2000).

In short, the MSC was introduced as a catalyst for the development of the latest information-based industries and is an area developed to encourage mutual enrichment of companies using modern technologies in a borderless world. The establishment of the MSC will enable Malaysia to leapfrog into the Information Age. MSC status companies are targeted to contribute about 50 percent or RM460 billion to the nation's gross domestic product (GDP) by 2020. To help meet this objective, MDC is trying to make it as easy as possible for MSC status companies to raise funds to support growth (i.e. fund projects, hire-experts, adopt hi-tech equipments) . One of the instruments established for this purpose was the Malaysian Exchange of Securities Dealing and Automation Quotation (Mesdaq) (Computimes series 1997-2000). The Malaysian government has also provided several incentives to encourage the growth of multimedia companies.

MSC-status companies incorporated in Malaysia can be wholly-owned by local and foreign legal entities. As of April, 2000, a total of 343 companies have been awarded multimedia status in software development (36 %), systems integration (17 %), content development (17%), telecommunication (11%) and other IT-related activities (19%), out of which 206 companies or 59 percent is local, 13 percent from Europe, 8 percent from United States and the rest from other countries. In the future, MSC hopes to house about 500 of the world class companies by 2020. It expects to have at least 50 world-class companies by 2003, increasing to 250 by 2010 (Computimes series 1997-2000).

The MSC is the beginning of a new era for Malaysia as it pave the way to a technology-based economy and a thinking society. The flagship applications of the MSC are actually Internet technology-based. As the dawning of the Internet technology era is taking place around the world, Malaysia is moving along with the MSC initiatives to attract the best-of-the-best technology, services and businesses around the world.

The realisations of electronic business will be one of the first things that everyone will encounter, even in Malaysia. This is the borderless market. Anyone can do business at anytime, anywhere. Of course, legal and business issues may abound but exploitation of the Internet technologies will overcome any challenges posed. Internet technology must also address the means of providing secure integrated, flexible, business-critical applications that create new value for businesses on the Internet. MSC and Non-MSC companies must be confident of these means in doing businesses with others as well. These new technologies and applications are now becoming very prevalent and they provide new way to make them available to employees, trading partners and customers.

Internet technologies will let Malaysian IT companies to automate their business processes from end-to-end, reducing costs and cycle time, and giving them tremendous boost in efficiency. It will also enhance the company image, communication and services by leveraging information. This is nor merely a Web home page or construction a browser. It is the integration of business

processes into the Internet. Finally, the vast reach of the Internet gives them an opportunity to increase revenue by opening up near markets and providing them with new electronic channels. They can now extend the reach and range of physical boundaries and even right into the homes.

However, Tengku Datuk Dr. Mohd. Azzman Shariffadeen, National IT Council (NITC) permanent secretary advised companies planning to make investments into the MSC should not be taken by the hype created by the extensive press coverage on the subject, which have created a kind of gold rush among companies keen to get onto the bandwagon. "Companies must differentiate the hype from the facts before making decisions," he said, reminding that the MSC will not be a "golden mountain" unless the companies are able to utilise new technologies in smart ways (Computimes series 1997-2000).

With the emergence of interorganisational IS such as electronic data interchange (EDI) and electronic mail (e-mail) has allowed firms to adopt business strategies designed to leverage the speed with which they transmit critical business information (Johnston and Vitale 1988). By actively participating in integrated business strategies (e.g. Just-In-Time and Continuous Replenishment) in which all members of the value chain (e.g. suppliers, manufacturers, transporters and retailers) share time sensitive business information) electronically, firms have found they can reduce transaction and inventory costs and improve overall customer service (Srinivasan *et al.* 1994).

Over the past few years, e-commerce has attracted widespread interest from both functional and IS management. The steady growth in sophistication and functionality of advanced hardware, software, networking, and telecommunications technologies has provided top managers the opportunity to reassess the way they are currently doing business (Kalakota and Whinston 1997; Steinfield *et al.* 1996). By leveraging the speed and connectivity that are an inherent part of doing business electronically, firms have realised both operational and administrative benefits that can improve the organisation's competitive position (Benjamin *et al.* 1990; Kalakota and Whinston 1997).

The concept of using electronic networks to effectively communicate and share information both with trading partners and consumers is still in its infancy; therefore e-commerce is vaguely defined. However, one definition that seems to effectively capture its broad scope states that e-commerce is "a new way of conducting business characterised by companies and their customers performing electronic transactions through computer networks" (Cronin 1994).

Based on this definition, any electronic technology that supports the timely movement of critical business information from one party to another to facilitate a business transaction is electronic commerce. Thus, e-commerce includes electronic data interchange (EDI), smart card, symbol technology, bar coding, interenterprise messaging and file transfer and the World Wide Web (Pyle 1996). By exploring new ways to utilise these technologies to improve or enhance existing business processes, firms have begun to reap the benefits of doing business in an electronic environment.

Hypotheses

Innovation adoption research indicates that an organisation will only choose to adopt an innovation if it perceives that doing so will provide significantly greater benefits than existing technologies and processes (Rogers 1983). The organisation must perceive that the adoption of the innovation will either resolve existing operational problems or provide the firm with new business opportunities.

H1: The means for perceived benefits are greater for MSC status companies than Non-MSC status companies

Organisational compatibility is the extent to which a technology is consistent with the values, needs or experiences of the organisation (Rogers 1983). Process oriented compatibility is the extent to which an innovation is congruent with the exiting practices and processes of the firm (Tornatsky and Klein 1982).

H2: The means for organisational compatibility are greater for MSC status companies than Non-MSC status companies

If a new technology is incompatible with the firm's existing values, preferred work practices, or existing IS infrastructure, it is less likely to be adopted (Kwon and Zmud 1987). This is crucial point, because the adoption of Internet technologies often requires firms to modify existing business practices to realise benefits (Jarvenpaa and Ives 1996). There is generally a positive relationship between compatibility and adoption behaviours (Ettlie *et al.* 1984; Ettlie and Vallenga 1979).

H3: The means for technical compatibility are less for MSC status companies than Non-MSC status companies

Complexity is the degree of difficulty that users will experience when trying to understand or use an innovation or technology in the workplace (Kwon and Zmud 1987; Rogers 1983). The introduction of a new technology can be a complex and intimidating process for firm employees, particularly if the technology requires them to change their existing business practices or acquire new technical skills.

H4: The means for complexity are less for MSC status companies than Non-MSC status companies

The Internet facilitates the sharing of information between businesses. In order for an organisation to fully realise the benefits associated with the adoption of these technologies, it is essential that a significant number of other firms with which it shares information (trading partners) also adopt the technology (Stephens 1992). Firms that have fully adopted Internet technology

will exert pressure on other trading partners to adopt (Davis 1995). Depending on that firm's power over trading partners and the extent of vertical dependence between firms in the value chain, organisations may be pressured to adopt a technology (Provan 1980).

H5: The means for trading partner pressure are greater for MSC status companies than Non-MSC status companies

Strong support of the top managers is vital to innovation adoption (Ettlie *et al.* 1984; Lederer and Mendelow 1988; Zmud 1984). Top management support goes beyond general approval for technology acquisition and includes a strong commitment from top management to support the technology at all levels of the organisation (Lederer and Mendelow 1988). Research indicates that securing top management support is a good predictor of level of success of a new information technology (Ives and Olson 1984).

H6: The means for top management support for the adoption of Internet technology are greater for MSC companies than Non-MSC companies

Because today's market place is increasingly competitive for many industries, firms are willing to explore the adoption of innovations in an attempt to gain a competitive advantage (Porter 1990). In an environment where the firm perceives a high level of competitive intensity and rivalry, the firm is more likely to allocate funds for the adoption of innovations; resulting in a greater level of overall innovation within the firm (Kimberly and Evanisko 1981; Reich and Benbasat 1990).

H7: The means for competitive pressure are greater for MSC status companies than Non-MSC status companies

METHODOLOGY

The research design for the study is exploratory in nature. Exploratory research was designed to provide a summary of some aspects of the environment when the hypotheses were tentative and speculative in nature (Aaker and Day 1990).

Data Collection Method

The data was secured by means of questionnaires, distributed to both MSC and Non-MSC companies that were planning to adopt, currently adopting and those that had already adopted Internet technology. Specifically, eligible respondents consisted of top IT executives who are responsible for managing the assessment and adoption of innovative information systems technologies.

According to the "*Computer Era*" directory, the population number of public and private IT organisations in Malaysia is about 1,976. The target population for this study was the organisations in the Malaysian IT industry. Selangor and

Kuala Lumpur, being the popular places among IT companies (73.5%), were selected as the location of study. The final sample size consisted of 306 respondents selected from records listed in the directory via a simple random sampling process. A set of self-administered questionnaire was handed to a potential respondent that satisfied the survey criteria and returned once the respondent finished answering it. The questionnaires were kept as simple, short and self-explanatory as possible.

Out of the total number of distributed, 250 usable questionnaires were obtained for analysis. The remaining number was deleted because of incomplete data (6), non-respondents (25), and those that did not adopt the technology (25). Non-response bias between respondents and non-respondents was also tested using chi-square test and the result showed there no significant difference at _ = 0.05 significance level for any of the respondent's demographic variables.

Data Analysis Techniques

Data were analysed using descriptive statistics, factor analysis, Cronbach's coefficient alpha, and MANOVA. To analyse the respondent's background, descriptive analysis and common measures such as *total, mean, frequencies* and *percentage* were utilised. The demographic information included: (I) job title, (II) the respondent's level of experience, (III) MSC status, (IV) total number of employees, (V) total number of IS employees, (VI) percent of firm's budget dedicated to IS, (VII) use of other Internet technologies, and (VIII) organisation's age.

Next, factor analysis was used to assess unidimensionality and Cronbach's coefficient alpha was used to assess internal consistency. The researcher then interpreted the output and related the findings to the hypotheses. The study consists of seven research hypotheses that were tested using MANOVA technique to determine whether the research hypotheses were supported by the data collected.

Respondent Profile

A series of eight questions were used to obtain demographics information on both the respondent and the respondent's organisation (Table 1).

FINDINGS

An exploratory factor analysis was used to help assess the unidimensionality of the multi-item scales. The unidimensionality of a set of items used to measure a given construct is necessary, but nor sufficient, condition for construct validity. Construct validity was also assessed by examining the internal consistency, and convergent and discriminant validity of each construct.

A principle components factor analysis using a Varimax rotation was performed using the twenty-nine items proposed to measure the following seven constructs: top management support, organisational compatibility, technical compatibility, complexity, competitive pressure, trading partner pressure, and

TABLE 1
Respondent and organisational profile

Category	Frequency (N)	Valid Percentage (%)
Job title		
IT managers	51	20.4
Chief Information Officers	47	18.8
Vice-Presidents	29	11.6
Director of IS	22	8.8
Others	101	40.4
Internet technology experience level		
Very experience	47	18.8
Somewhat experience	72	28.8
Experience	63	25.2
Limited experience	58	23.2
Not experience	10	4.0
MSC status		
Non-MSC companies	126	50.4
MSC companies	124	49.6
Total employees		
Less Than 10 (Micro)	68	27.2
More Than 10 Up To 100 (Small)	97	38.8
More Than 100 Up To 500 (Medium)	46	18.4
More Than 500 (Large)	39	15.6
Total IS employees		
Less than 3	73	29.4
More than 3 up to 10	91	36.7
More than 10 up to 50	29	11.7
More than 50	55	22.2
Missing	2	
Annual IS budget		
Less than 1%	82	36.4
More than 1 % up to 5%	113	50.2
More than 5% up to 10%	20	9.0
More than 10%	10	4.4
Missing	25	
Internet technologies		
Electronic Mail (E-mail)	241	91.6
Web-site	200	80.0
Intranet	199	79.6
Extranet	168	67.2
Electronic Data Interchange (EDI)	57	22.8
Electronic Commerce (E-commerce)	56	22.4
Electronic Fund Transfer (EFT)	27	10.8
Years company in operation		
Less than 1	38	15.2
1 to less than 5	136	54.4
5 to less than 10	55	22.0
10 years to less than 20	17	6.8
More than 20	4	1.6

perceived benefits. The criteria used to determine the number of factors to extract was an eigenvalue that was greater than equal to one (Jeller and Carmines 1980). The results indicated that seven factors had eigenvalues exceeding 1.00 (Table 2). Thus, seven factors were extracted during this analysis.

Dimensionality of each of the factors was assessed by examining the factor loadings. Items with factor loadings of greater that 0.5 on the factor with which they are hypothesized to load were considered adequate indicators of that factor (Hair *et al.* 1995). However, items with factor loadings of at least 0.3 on other factors were examined to see it they measured an additional factor.

Based on the rotated results, a new construct called organizational support was developed which encompassed both the three items in the hypothesized construct top management support and two items from organisational compatibility. Another new construct called technical complexity was developed which encompassed both the items in the hypothesized construct technical compatibility and complexity. As for the eight items hypothesized to measure the construct perceived benefits were loaded on two factors, perceived direct benefits and perceived indirect benefits.

Reliability has been defined as the "degree to which measures are free from error and therefore yield consistent results" (Peter 1981). One aspect of reliability is internal consistency which is an indicator of the level of homogeneity of a measuring scale (Cronbach 1951). One criterion that has been widely used to assess the reliability of a multi-item measurement scale is Cronbach's (Cronbach 1951) coefficient alpha. Based on the reliability analysis result, six of the seven constructs had coefficient alpha values exceeding 0.7 (see Table 2). Only the construct competitive pressure had coefficient alpha of 0.54. Nunnally (Nunnally n.d) suggested that a set of items with a coefficient alpha greater than 0.7 is considered internally consistent. Because this construct had a coefficient alpha less then the recommended level of 0.7, its internal consistency was weak. Therefore, it was not used in subsequent analysis.

Test of Hypotheses

MANOVA was used to examine the relationship between companies' MSC status and the final six constructs hypothesized to impact Internet technology adoption within organisations. Based on the findings, it can be seen that there is significant differences between companies' MSC status and factors for adopting Internet technology. The Wilk's Lambda, (F-value = 44.169), and the level of significance, (p-value = 0.0001 < 0.05), indicate that the means for the MSC and Non-MSC companies contained significant differences at the a = 0.05 level (Table 3).

Table 4 shows a comparison of adoption factors between MSC and non-MSC companies by using their respective mean values. The mean values for the six Internet technology adoption factors are ranked in a definite order and followed the sequence of importance, beginning with most important to least

TABLE 2
Confirmation of the 7 factors

Measurement Variable and Dimension	Factor Loading
Factor 1: Organisational Support (Reliability α = 0.8900)	
Organisation Values and Beliefs	0.838
Top Management Communicate	0.799
Top Management Interest	0.797
Favourable Attitude	0.797
Top Management Importance	0.788
Factor 2: Trading Partner Pressure (Reliability _ = 0.9123)	
Trading Partner Business Needs	0.890
Adversely Impart Trading Partner Relations	0.849
Trading Partner Strategies	0.826
Trading Partner Recommendation	0.815
Factor 3: Perceived Direct Benefits (Reliability _ = 0.8877)	
Reduce Transaction Costs	0.899
Improve Overall Productivity	0.865
Improve Cash Flow	0.822
Improve Operational Efficiency	0.759
Factor 4: Technical Complexity (Reliability _ = 0.7953)	
Decrease Productivity-Time To Learn	0.818
Complex To Use	0.805
Disrupt Work Environment	0.783
Complex To Develop	0.680
Factor 5: Perceived In-direct Benefits (Reliability _ = 0.9173)	
Improve Existing Customer Relations	0.865
Reach New Customers	0.858
Increase Ability To Compete	0.837
Factor 6: Organisational Compatibility (Reliability _ = 0.8444)	
Computerised Data Resources	0.856
Organisational Experience	0.820
Communications Infrastructure	0.772
Factor 7: Competitive Pressure (Reliability _ = 0.5438)	
Customers Can Switch Easily	0.751
Intense Competitive Rivalry	0.726
Monitor Competitors Action	0.636

TABLE 3
MANOVA statistic results

Statistics	F-value	D.F.	p-value
Wilks' Lambda	44.169	7	0.0001
Pillai's Trace	44.169	7	0.0001
Hotelling's Trace	44.169	7	0.0001
Roy's Largest Root	44.169	7	0.0001

important adoption factors for MSC and Non-MSC companies. The adoption factors ranking identified for MSC organisations are similar to those for Non-MSC companies, with exception of organisational compatibility and perceived in direct benefits. Perceived in-direct benefits factor was second in importance for MSC companies and was third in importance for Non-MSC companies. The organisational compatibility factor was second in importance for Non-MSC companies and was third in importance for MSC companies. Other factors were considered to be similar in importance by MSC and Non-MSC companies.

TABLE 4
Comparison between MSC and Non-MSC companies

MSC companies	Means	Non-MSC companies	Means
1. Organisational Support	3.5258	Organisational Support	4.1778
2. Perceived In-Direct Benefits	3.0914	Organisational Compatibility	3.9339
3. Organisational Compatibility	2.8978	Perceived In-Direct Benefits	3.8624
4. Perceived Direct Benefits	2.8669	Perceived Direct Benefits	3.4583
5. Trading Partners Pressure	2.6714	Trading Partners Pressure	3.3710
6. Technical Complexity	2.4738	Technical Complexity	2.1667

NOTE: The scale used for all constructs ranged from 1 (strongly disagree) to 5 (strongly agree)

A further analysis between the companies' MSC status and each of the factors for adopting Internet technology shows that the F-values obtained from the univariate analysis of variance for each construct were significant (p-value > 0.05) for hypotheses, H1 (perceived direct benefits), H2 (organisational compatibility), H3 (technical complexity), H4 (trading partner pressure), H5 (organisational support), and H6 (perceived in direct benefits). Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. However, the univariate F-values for hypotheses, and indicated that the means for those constructs were significantly greater for non-MSC than for MSC companies. This proves that the expected results were not supported (Table 5). Hence, the mean-values were greater for non-MSC companies than for MSC companies.

CONCLUSION

The main objective of this study was to determine the CSFs that influences MSC and Non-MSC companies to adopt Internet technology. This study was carried out using a questionnaire survey on 306 randomly selected IT organisations located around Selangor and KL. Appropriate measure of control and precautions were taken during each section to produce more reliable and meaningful views and opinions. Through a pilot test, the reliability and consistency of the survey instrument were examined. Factor analysis was used to group and minimise 29 variables into 7 constructs for easier management. The

TABLE 5
Summary of research findings by MSC status

Constructs	F-value	p-value	Expected Results	Actual Results
Perceived Direct Benefits	42.260	0.000	Greater Means for MSC Companies than Non-MSC Companies	Not supported
Organisational Compatibility	168.528	0.000	Greater Means for MSC Companies than Non-MSC Companies	Not supported
Technical Complexity	11.852	0.001	Lower Means for MSC Companies than Non-MSC Companies	Not supported
Trading Partner Pressure	50.788	0.000	Greater Means for MSC Companies than Non-MSC Companies	Not supported
Organisational Support	58.335	0.000	Greater Means for MSC Companies than Non-MSC Companies	Not supported
Perceived Indirect Benefits	60.126	0.000	Greater Means for MSC Companies than Non-MSC Companies	Not supported
Competitive Pressure (*)			Greater Means for MSC Companies than Non-MSC Companies	Not supported

NOTE: * not included in MANOVA because the factor was not internally consistent

correlation of the constructs was also investigated. As a result, the competitive pressure construct was found to be not reliable; thus, it was dropped from further analysis.

The overall result shows that there was significant difference between MSC and Non-MSC companies and six of the seven constructs (i.e. organisational compatibility, technical complexity, organisational support, trading partner pressure, perceived direct benefits, perceived in-direct benefits). In short, both MSC and Non-MSC companies were influenced by these factors to adopt Internet technology.

However, the mean-values were significantly greater for Non-MSC and MSC companies, which means that the expected results were wrong and that Non-MSC companies were more concerned with the above factors than the MSC companies and vice-versa for the technical complexity construct. According to theory, Non-MSC companies are more likely to adopt Internet technology if it is compatible with their existing beliefs and work cultures than MSC companies because most of the MSC companies are small and fairly new; thus, they should face less problems to incorporate new technologies into their corporate cultures. As for the technical complexity issue, Non-MSC companies were less concerned about it than MSC companies as they have more financial resources to spend on hi-tech equipments or/and hire external consultants to solve any problems they might face. In addition, bigger Non-MSC companies have more IS staff per total company employees than smaller MSC companies. Non-MSC companies also have to communicate their intention to more internal and external parties (i.e. employees, trading partners, and customers) to gain support from them,

otherwise none of them would know about it or use it. Since Non-MSC organisations have to deal with more trading partners, they tend to receive more pressure from them than MSC organisations. Finally, Non-MSC companies are more particular about the direct and indirect benefits from adopting Internet technology because any decision they make will affect their operations, productivity, competitiveness, customer relations, cash flow, and etc.

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