The Impact of Internal and External Mechanisms on the Goal Setting of a B2B/B2C E-Commerce Creation

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Abstract

The empirical study in this paper targeted leading Taiwanese software vendors. A total of 170 vendors of Information Service Industry Association of Taiwan were selected to be subjects of the analysis. Questionnaire was designed to investigate the impact of internal and external mechanisms on the goal setting of SMEs e-commerce. Conclusions and managerial implications are provided that may assist SMEs in the managerial process of e-commerce creation.

Keywords: E-Commerce Websites, Small and Medium-Sized Enterprises (SMEs)

1. Introduction

1.1 Background

Recently, the fast growing Internet and WWW environment has opened up a new digital world of commercial opportunities. E-commerce is vital to the development of global and national information infrastructure. SMEs are recognized as Taiwan's economic growth engine. The capability of information transmission plays a vital role in enhancing the competitiveness of SMEs.

Taylor et al (2004) addressed that SMEs lag far behind large ones in adopting e-commerce, since these network opportunities were far too expensive for small firms, and normally large ones can afford such applications [24]. There is no denying that with the help of e-commerce, SMEs can make use of resources more effectively. However, there are larger barriers ahead, both monetary and skill-related, to creating and maintaining a website. The long-term benefits are not readily apparent to make a significant advance for firms of all sizes.

1.2 Motivation and Purpose

study classifies e-commerce operational This mechanisms in two aspects: internal mechanisms and external mechanisms. The internal mechanisms refer to the ability of enterprises in the use of websites. The external mechanisms, in contrasts, refer to customer-related functions. Internal and external mechanisms often operate in combination to bring about the overall benefits of websites. The purpose of this study is as follows:

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1. Information processing capabilities, which serve as the internal mechanisms of e-commerce operations affect the goal setting of a B2B/B2C e-commerce.

2. External mechanisms, which consist of e-commerce security, e-commerce trust, CRM, and business operations management, are highly significant to the goal setting of websites.

2. Literature Review

2.1 E-Commerce Environment in Taiwan

Definitions of SMEs may differ from time and location. For instance, according to the Kelsey Group (2004), the leading suppliers of strategic research and data analysis, small and medium-sized enterprises are 'forty-eight percent of 'Hometowner' businesses, whose customers and suppliers are primarily within 50 miles of their physical location" [8].

Since 1994, e-commerce continued to grow at a robust pace, and came to a boom in 2000, but burst into a bubble in 2001. In the wake of burst bubble, a great deal of repositioning, rebuilding and consolidation has been taking place in the online space [28]. Many enterprises started to focus their attention on other elements that are more important. Core topics such as corporate value creation, customer relationship management, operational management and other service management come to the fore. It seems that there is an inexorable trend for traditional enterprises toward the use of e-commerce transactions.

2.2 Considerations in E-Commerce Design

E-commerce websites can replace or complement the traditional commercial activities. A good site can help a firm to communicate, interact and establish good relationship with international customers without being restricted to business work hours, time zones and space.

In this study, we propose that that website designers should put themselves in consumers' shoes to see what kinds of 'utility' they can get from the website, and have a clear idea of what kind of products or services enterprises render to consumers. The so-called 'consumer utility' refers to the assessment of utility of a consumer as to the purchasing behaviors conducted in the purchase of goods or services on the website. An overview of consumer utility is given in Table 1 [4].

Table 1. Consumer Values			
Utilities	Descriptions		
Form utility	Website having the product designed or delivered in the right form.		
Service utility	Consumer is in power of whether and how to purchase, or determining the utility of products.		
Time utility	Products are available and delivered at the right time.		
Place utility	Products are in the place where they can be consumed.		
Possession utility	Consumer value converts raw material into finished goods, or having diversified products packed, and classified. Products are in the possession or ownership of the person(s) who wants to consume them.		
Symbolic utility	Reassurance of consumer's self-image. Behaviors that are socially engaged. Goods are for those with common interests, shared attitudes and beliefs.		
Comfort utility	A sense of satisfaction obtained from the purchase of goods, acquisition of experience, mental and intellectual stimulation, or physical comfort.		

Source: Chao and Chou (2001)

2.3 Internal Mechanisms: Organizational Processing

Organizational processing is considered as the fundamentals of an internal operational mechanism of An organization can be viewed as an e-commerce. information processing system. Within an organization, employees must perform key knowledge processing activities, including information inputs, by means of knowledge acquisition, information distribution. organizational memory, and information integration [22]. In general, our knowledge in organizational information processing derives from organizational learning, since organizations are viewed as information processing systems [23].

Huber (1991) describes there are four learning constructs linked to organizational learning: knowledge acquisition, information distribution, information interpretation, and organizational memory. In addition, he also reminds readers that information interpretation is related to sense making, and is not suitable for the research of ordinary organizational structure [10]. We knowledge acquisition. information will adopt distribution, information integration and organizational memory as the main constructs in the study of information processing perspective [1].

2.4 External Mechanisms: E-Commerce Security, E-Commerce Trust, CRM, and Business Operations Management

Since the first boom of the Internet in the late 1990s,

reliability and security have been the concern of a B2C e-commerce [27]. On-line trust has been a crucial element that triggers the growth of e-commerce. In addition, Corritore et al (2003) elucidated the features of trust: trust enables people to live in risky and uncertain situations [5, 6, 18]. It provides the means to decrease complexity in a complex world by reducing the number of options one has to consider in a given situation [2, 15, 17]. Trust is viewed as a kind of social capital that makes coordination and cooperation between people possible [19, 21]. In the world of business, trust is key to successful business transactions and long-term relationships [12].

Based on the literature review previously discussed, we assume that 'e-commerce security', 'e-commerce trust', 'CRM', and 'business operations management' are optimal variables for the analysis of e-commerce operations. Surveys have been conducted on domestic, international enterprises and e-commerce service providers with regards to the information services, contracts and software solutions or services they offer. A questionnaire is designed based on the sub-constructs of external mechanisms discussed in the previous section.

3. Methodology

3.1 Hypotheses and Research Framework

In this section, we will start to investigate the correlation among internal, external mechanisms and goal setting of e-commerce sites. An overview of the correlation between internal/external mechanisms and goal setting of a B2B/B2C e-commerce sites is shown in Figure 1.



Source: this study

Based on this framework, we develop the following hypotheses:

H1: Organizational information processing capabilities affect the extent to which the goal of B2B and B2C

e-commerce is achieved.

H2: External mechanisms affect the extent to which the goal of B2B and B2C e-commerce is achieved.

3.2 Research Design and Data Collection

We performed a pre-test with 170 members in CISA. They were asked to complete a questionnaire, which was later refined subjected to their comments and suggestions on its content and design. With CISA members as sampling subjects, pilot test was conducted from September to early October in 2004. We distributed computer-based questionnaires to potential respondents, either by e-mails or asking respondents to fill in the on-line questionnaire on the website. Every questionnaire was recorded from the time sent till the time returned to ensure the validity of the questionnaire. A total of 51 returns were drawn from e-mails or on-line responses.

4. Empirical Research and Analysis

To test the hypotheses pertaining to the effect on individual variables, SPSS 10.1 statistical package developed by SPSS (Statistical Product and Services Solutions) was used.

4.1 Sampling Background

This study covers top executives, managers. Nearly 85% of respondents are engineers levels or above. Pertaining to years of workplace, over 70% of respondents with at least 3 years in workplace answered the survey. Firms in sample study differ in size. Over 70% of firms sample have more than 10 employees.

4.2 Multiple Regression: Reliability and Validity Analysis

4.2.1 Organizational Information Processing

In order to test Hypothesis 1 and 2, the regression analysis was conducted to examine SMEs' capabilities for organizational information processing. There are two types of reliability tests involved: measure of stability and measure of equivalence/consistency. Reliability refers to how dependably or consistently a test measures an idea. Generally speaking, reliability improves as test length increases. In this study, we use Cronbach's alpha to measure the coefficient of reliability. Usually, 0.7 is conceived as an acceptable reliability coefficient. The larger the reliability coefficient, the more repeatable or reliable the test scores. In this case, if Cronbach's alpha values are greater than 0.7, then the overall reliability is high; if the values are smaller than 0.35, then the overall reliability is low. Table 2 shows that each alpha value is greater than 0.70, indicating that the sample design is reliable.

Table 2. Renability Analysi

Constructs	No. of Item	Cronbach
Knowledge	4	0.7810
acquisition		
Information	4	0.8504
distribution		
Organizational	4	0.9039
memory		
Information	4	0.9175
integration		

Note: ***:p<0.01; **:p<0.05; *:p<0.1

4.2.2 Internal Mechanism of B2B/B2C E-Commerce Operations

Regression analyses were conducted on the sample companies with internal mechanisms as the independent variables. With the regression analysis, we hope to develop a linear regression that can explain the correlation between independent variables and dependent variables. Meanwhile, we can how the same independent variables of internal mechanisms influence the dependent variables, i.e. goal setting. With the regression analysis, we can also eliminate independent variables that are statistically insignificant. Table 3 and 4 present the results of the regression analyses with sample companies' internal mechanisms as independent variables and goal setting of e-commerce as dependent variables.

Table 3. Regression of Internal Mechanisms of B2B E-Commerce

Dependent	Independent	Standardized	t	Significance
Variables	Variables	B -coefficient	Value	
B2B	Knowledge	0.525	2.466	**0.018
e-commerce	acquisition			
goal setting	Information	0.062	0.323	0.749
	distribution			
	Organizational	-0.143	-0.728	0.471
	memory			
	Information	0.123	0.503	0.717
	integration			
$R^2 = 0.341$	Adj. $R^2 = 0.277$	F = 5.303	Sign. = 0.00	2

Table 4. Regression of Internal Mechanisms of B2CE-Commerce

Dependent	Independent	Standardized	t	Significance
Variables	Variables	B -coefficient	Value	-
B2C	Knowledge	0.439	2.078	**0.044
e-commerce	acquisition			
goal setting	Information	0.164	0.837	0.407
	distribution			
	Organizational	-0.189	-0.959	0.343
	memory			
	Information	0.091	0.374	0.710
	integration			
$R^2 = 0.341$	Adj. $R^2 = 0.277$	F = 5.303	Sign. = 0.00)2
	0.01.11.0.01			

Note: ***:p<0.01; **:p<0.05; *:p<0.1

The findings indicate that 'knowledge acquisition capabilities' is positive and statistically significant to the goal setting for both B2B and B2C e-commerce. In this case, this finding supports Hypothesis 1 partially. As the tables indicate, 'information distribution', 'organizational memory', and 'information integration' are less significant. We assume that today's enterprises obtain information through the Internet, but they do not store it, nor do they integrate it into the organizational knowledge base. We hope the statistical results provide a useful reference for SMEs in process of e-commerce creation.

4.2.3 External Mechanisms of B2B/B2C E-Commerce Creation

Here, the actual regression analyses were conducted on the sample companies with external mechanisms as independent variable, and goal setting as dependent variables. The results are given in Table 5 and 6 respectively.

Table5. Regression of External Mechanisms of B21	3			
E-Commerce				

Dependent	Independent	Standardized	t	Significance
Variables	Variables	B -coefficient	Value	
B2B	E-commerce	0.890	1.056	0.298
e-commerc	security			
e goal	E-commerce	0.519	-0.392	0.697
setting	trust			
	CRM	0.528	0.267	0.791
	Business	0.341	1.394	0.171
	operations			
	management			
$R^2 = 0.341$	Adj. $R^2 = 0$.	277 F = 5.303	Sign. =	0.002

Table 6. Regression of External Mechanisms of B2C E-Commerce

Dependent	Independent	Standardized	t	Significance
Variables	Variables	B -coefficient	Value	
B2C	E-commerce	0.292	1.720	*0.093
e-commerc	security			
e goal	E-commerce	-0.114	-0.701	0.487
setting	trust			
	CRM	-1.504	-1.504	0.140
	Business	3.567	3.567	***0.001
	operations			
	management			
$R^2 = 0.341$	Adj. $R^2 = 0$.	F = 5.303	Sign. =	0.002

Note: ***:p<0.01; **:p<0.05; *:p<0.1

The results show that external mechanisms exert minimal explanatory power to the goal setting of the B2B e-commerce. In a B2C environment, only 'e-commerce security' and 'CRM' mechanisms are positive and statistically significant. In other words, if B2C websites have good controls in security and business operations management, enterprises will operate their sites better. The findings partially support Hypothesis 2.

5. Conclusion and Managerial Implications

5.1 Conclusion

Empirical results show that all the hypotheses are partially supported. The findings indicate that (1) Only the 'knowledge acquisition capabilities' is positive and statistically significant to the goal setting for both B2B and B2C e-commerce. (2) External mechanisms exert minimal explanatory power to the goal setting of the B2B e-commerce. (3) Only 'E-commerce security' and 'CRM' mechanisms affect the B2C e-commerce operations.

5.2 Managerial Implications

1. Set Vision. Respondents of two software vendors delivered their concerns over the e-commerce creation. One of the respondents indicated, 'current e-commerce solutions are too complicated for SMEs to use. Costs, company operations and business operations management are primary concerns [14]. Normally, it takes at least five years to bring the e-commerce business into fruition. As is indicated in the questionnaire, the first step SMEs have to do is know their market. Before pursuing the e-commerce path, they need to assess their current market. After identifying where your customers are, what your customers want, and what you have, then expand e-commerce solutions to meet customer demands.' From a software supplier's viewpoint, it is essential for medium and small sized enterprises to set a long-term vision to guide their firm as they enter the e-commerce world [11]. Firms must accept that it is a business, not a technical endeavor. Do not tempted to skip this stage, otherwise, a firm will not know whether their current e-commerce strategies are progressing in the right direction.

2. Importance of Information Processing Mechanisms.

Table 3 and Table 4 show that a firm's capability for information acquisition is both important for B2B and B2C e-commerce. It is becoming more and more important for enterprises to have a mechanism in place for information processing [16, 26]. In the process of informatization, a firm usually accumulates key information from internal and external organizations. If it does not properly use and integrate it, then the sharing of information will be difficult and precious resource a waste. In this case, we suggest a firm have the EIP applications in place to integrate internal and external information, and make timely information exchange with employees, customers and partners possible. Meanwhile, we suggest a public information switch platform is available to provide SMEs a cost saving solution, so that they can enhance competitive advantages in the global market [13, 20].

3. Knowledge Integration Mechanism in Place.

Nowadays, websites are not just built to serve customers; they are used for knowledge management. A knowledge-driven culture refers to the active learning behavior and fresh thinking of the entire organizational members. Organizational innovation calls for collective intelligence, insights, know-how and action of the organization [7]. Streams of literature pointed out that organizational learning is a vital source for organizational intelligence. In other words, an organization is viewed as a learning system where you can acquire, communicate, interpret the information, and where you can retrieve information for decision-making. Therefore, we suggest

SMEs should take knowledge management into consideration in designing operational mechanisms [3, 9, 25].

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