

# Effects of Competitive Strategy, Knowledge Management and E-Business Adoption on Performance

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## ABSTRACT

*The study analyzed and measured current business organizations use of competitive strategy, knowledge management and e-business adoption effect on performance. The study proposed that the use of a differentiation strategy, a greater capability of knowledge management and a higher level of e-business adoption, lead to higher organizational performance in the marketplace. Samples were selected the executives of 1,000 top Taiwanese companies in 2009. One thousand invitation questionnaires were sent to selected executives with 93 valid data collected, and this percentage was acceptable for the study. The results demonstrated: 1) the significant relationship between knowledge management capability and organizational performance, 2) the significant relationship between e-business adoption and organizational performance, 3) the different effect of capabilities of knowledge management and level of e-business adoptions on organizational performance, and 4) a firm with a differentiation strategy and a higher level of e-business adoption creating greater organizational performance. It also help organizations to find out what are the essential elements to create their value and advance better performance.*

**Keywords:** Strategy, E-business Adoption, Knowledge Management, Organizational Performance

## INTRODUCTION

Knowledge, e-business and strategy become three powerful weapons of a firm to improve their organizational performance in the marketplace. It is extremely important for firms to identify a strategy with a greater capability of knowledge management and a higher level of e-business adoption in the knowledge economy era that can create the greatest organizational performance.

### Purpose

The purpose of this study was to analyze and measure how organizations using competitive strategies, e-business and knowledge management impacted on their organizational performance.

## LITERATURE REVIEW

### Knowledge Management

Knowledge has been distinguished from data and information. Data comprises a flow of events, facts, observations, or perceptions by an organization (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Information is a subset of that has been turned into usefulness (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Knowledge is the transformation of information and consists of beliefs, concepts, perspectives and methodologies (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Knowledge is on the

highest level of the hierarchy, information is in the middle, and data is on the lowest level (Becerra-Fernandez, Gonzalez & Sabherwal, 2004).

Becerra-Fernandez, Gonzalez and Sabherwal (2004) stated that knowledge can classify as explicit knowledge-- expression into words and numbers, and tacit knowledge-- including insights, intuitions and hunches. Knowledge is created through four categories of knowledge dissemination identified as knowledge-creation spiral including socialization, externalization, combination and internalization (Nonaka, 1994; Nonaka & Konno, 1998); Socialization is moving tacit knowledge by shared experience (Nonaka, 1994; Nonaka & Konno, 1998). Externalization is to transfer personal tacit knowledge into becoming public explicit knowledge (Nonaka, 1994; Nonaka & Konno, 1998). Combination is to combine existing and new explicit knowledge throughout the organization (Nonaka, 1994; Nonaka & Konno, 1998). Internalization is to convert explicit knowledge into one's own tacit knowledge (Nonaka, 1994; Nonaka & Konno, 1998).

Organizations with greater developed knowledge management have a special capability (Darroch, 2003) and firms with mature knowledge management depended on it's capability of KM. Gold et al. (2001) identify effective knowledge management as an essential organization capability that impacting all areas of their capability including infrastructure-- consisting of technology, structure and culture, and processes consisting of acquisition, protection, conversion, and application. KM is concerned with four main kinds of capability, including, acquisition capability, protection capability, conversion capability, and application capability (Gold, Malhotra & Segars, 2001; Becerra-Fernandez, Gonzalez & Sabherwal, 2004).

Acquisition capability is defined as the development of knowledge from data and information of organizations (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Protection capability is defined as knowledge capturing and focuses on the process of retrieving knowledge of organizations (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Conversion capability is the ability to communicate or transfer the knowledge of organizations to other individual (Becerra-Fernandez, Gonzalez & Sabherwal, 2004; Laudon & Laudon, 2006). Application capability is the ability to actually use knowledge of originations (Gold, Malhotra & Segars, 2001). The effective use of knowledge application enables firms to increase their efficiency and reduce costs (Gold, Malhotra & Segars, 2001).

### **Internet Business Adoption**

Internet business means conducting business electronically. Firms adoption of e-business could extend their markets and territories, make their customer service worldwide, and allow for creating global marketing partnerships (Silverstein, 2002) that upgrade firms' competitiveness and economic growth (Marijke, 2004).

Zhu and Kraemer (2002) developed an e-commerce adoption metric that consisted of four stages: 1) information level- available products and services information, 2) transaction level- enable to assist transactions online, 3) interaction and customization level- enable online interactions between the customers and the firm, and customize products for user preferences, and 4) supplier connections level- company enable electronic linkages to integrate suppliers for procurement, fulfillment, logistic and data sharing. The higher levels of e-business adoption can create greater values and enhance financial opportunities and organizational performance (Sohn & Wang, 1998; Teo & Pian, 2003; Zhu & Kraemer, 2005).

### **Competitive Strategy**

Strategy is the key factor to creating the value of the performance in business organizations.

Strategy comprises different sets of activities to establish valuable positions and projects to accomplish a firm's objectives and long-term goals (Porter, 1980). Porter's (1980) generic competitive strategy is one of the most well known strategies involving three elements: (a) *cost leadership*, a firm goals to meet low cost in its industry, (b) *differentiation*, a firm prospects becoming unique and different in its market, and (c) *focus*, a firm engages in focusing on particular buyers, product lines, or markets.

### **Organizational Performance**

Performance is associated with a firm's results. Performance indicated the performance of organizations and revealed the outcome of business processes and accomplishments and the success of meeting established goals (Zhang & McCullough, 2005). Jouirou and Kalika (2004) measured organizational performance by a subjective way including cost reduction, customer satisfaction, improved production, and the ability to innovate. Wu (2001) used efficiency, sale performance, customer satisfaction and relationship development to measure of firm performance.

### **Internet, Knowledge Management, Strategy and Performance**

The capability of e-business has a significant positive relationship with performance and a higher stage of e-business adoption is related better firm performance (Teo & Pian, 2003; Wu, Mahajan & Balasubramanian, 2003; Zhu & Kraemer, 2005). A differentiation strategy provides greater benefit than a cost leadership strategy in the e-market place (Evans & Smith, 2004; HomBurg, Krohmer & Workman, 1999; Lederer et al., 1997). A firm with greater knowledge management capability can create better organizational performance (Gold et al., 2001).

A firm's implementing a business strategic type with information technology (IT) or information system (IS) adoption has a significant impact on their performance (Jahangir, Yash & Somers, 1996; Jouirou & Kalika, 2004; Lai & Wong, 2005). E-business is an important component to pilot knowledge management. Therefore, knowledge management, Internet, and strategy are the important elements to influence the performance of organizations (Kamssu, Reithel & Ziegelmayer, 2003).

## **METHODOLOGY**

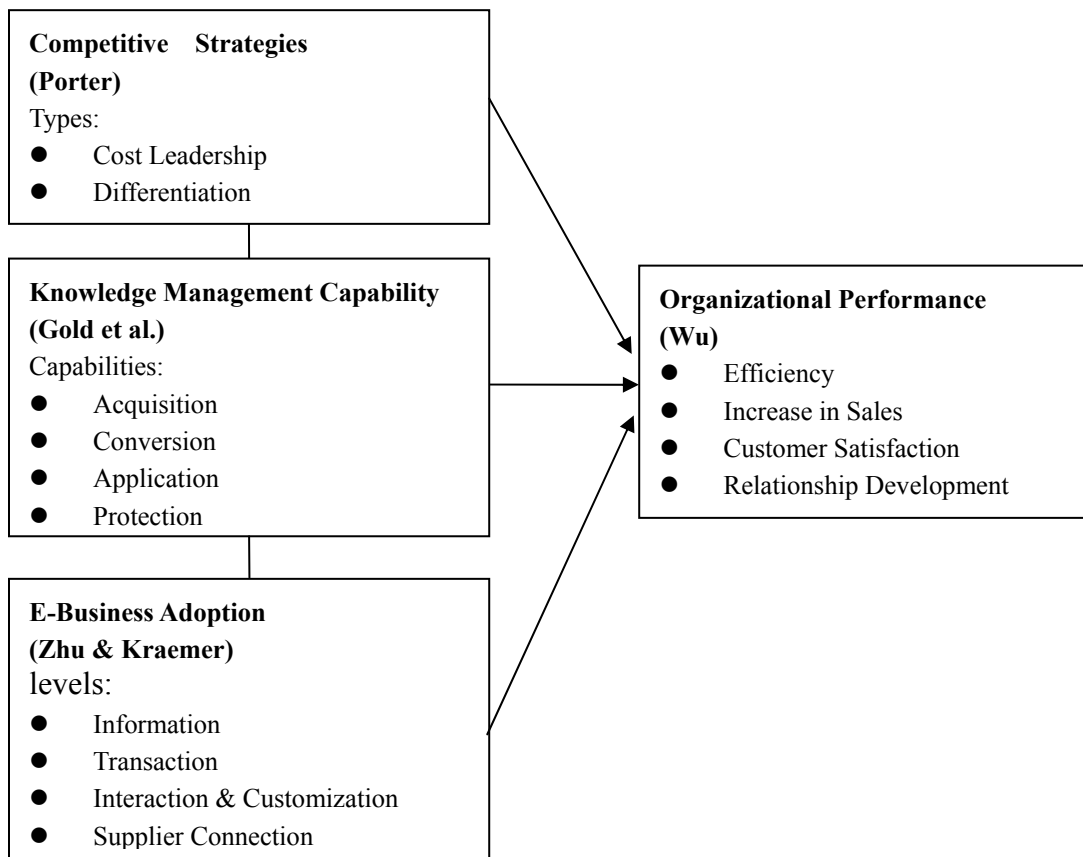
### **Theoretical Framework**

The study's theoretical framework was grounded in generic competitive strategy theory, knowledge management capabilities concept, and the level of Internet adoption model. The concept framework proposed that competitive strategy, knowledge management capability and Internet business adoption had a great effect on organizational performance. However, there are four components in the study: 1) competitive strategy (Porter, 1980, 1985), 2) e-business adoption (Zhu & Kraemer, 2002), 3) knowledge management capability (Gold et al., 2001), and 4) organizational performance (Wu, 2001).

Competitive strategy concentrated on two primary types, namely, 1) cost leadership, and 2) differentiation, as shown in Figure 1. Knowledge management focused on four capabilities, 1) acquisition, 2) conversion, 3) application, and 4) protection. E-business adoption concentrated on four primary stages, namely, 1) information, 2) transaction, 3) interaction and customization, and 4) supplier connection. Organizational performance focused on four components, including 1) efficiency, 2) increase in sales performance, 3) customer satisfaction, and 4) relationship development.

The study theoretical framework proposed were that: 1) the type of competitive strategy, capability of knowledge management and level of e-business adoption had a positive effect on organizational

performance, and 2) a firm with a greater capability of knowledge management associated with a differentiation strategy and a higher level of e-business adoption, had the best organizational performance.



**Figure 1: Theoretical Framework.**

### Sampling Plan

The sample plan included the following: 1) The top 1000 Taiwanese Corporations listed in *CommonWealth* magazine in 2010, 2) The survey sample was selected from the records of 1,000 top Taiwanese companies identified by *CommonWealth* magazine in 2009, and 3) It were the executives of 1,000 top Taiwanese companies in 2009.

### Instrumentation

According to theoretical framework, the study developed 82 item questionnaires. The questionnaire comprised four items related to competitive strategy, e-business adoption, knowledge management capability, and organizational performance. All the measurement items were adopted from prior studies (Porter, 1980, 1985; Zhu & Kraemer, 2002; Gold et al., 2001; Wu, 2001).

The four-part, self-report survey was used to collect data. Part 1 with 7 item questionnaires and two dimensions of competitive strategy were developed by Porter (1980, 1985). Part 2 with 19 item questionnaires and four dimensions of e-business adoption were developed by Zhu and Kraemer (2002), including 1) information, 2) transaction, 3) interaction and customization, and 4) supplier connection. Part 3 with 41 item questionnaires and four dimensions of knowledge management capability were developed

by Gold et al. (2001), including 1) acquisition, 2) conversion, 3) application, and 4) protection. Part 4 with 15 item questionnaires and four dimensions of organizational performance developed by Wu, (2001). The Cranach's alpha was greater than 0.6, the reliability was acceptable.

### Data Analysis

Quantitative research methods conducted to answer proposes. Data analysis employed the SPSS statistical software. The researcher used descriptive statistics and regression to analyze data that determined the relationships among variables.

## RESULTS

The statistical methods were used to answer proposes, included descriptive statistics and multiple regressions. Of the 1000 companies, one thousand invitation e-mails were sent to selected executives. There were with 93 (9.3%) valid data collected. Therefore, 9.3% of the sample was usable data, and this percentage was acceptable for this study. The results are shown in Table 1 which gives frequency distribution of the sample.

**Table 1: Statistics Frequencies of Samples**

		Frequency	Percentage
N	Valid Sample	93	9.3
	Missing Sample	907	
	Total	1000	

SPSS was utilized to analyze the 93 valid datasets. The Cronbach's alphas of this study were 0.6 for competitive strategy, 0.7 for knowledge management, 0.9 for E-business adoption, and 0.7 for operational performance. The Cranach's alpha was greater than 0.6, the reliability was acceptable.

The regression was conducted to test competitive strategy, knowledge management, and e-business adoption for its effects on organizational performance. In Table 2, the regression analysis indicated these competitive strategy and knowledge management had significant differential effects on organizational performance. This table showed competitive strategy and knowledge management supported at the 0.05 significance level.

**Table 2: competitive strategy, knowledge management, e-business adoption & organizational performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	1.572	.457		3.441	.001
Strategy	.158	.136	.130	1.163	.248
Knowledge	.256	.117	.239	2.179	.032
E-Business	.182	.083	.226	2.192	.031

The regression was conducted to test each type of competitive strategy for its effects on organizational performance. In Table 3, the regression analysis indicated these differentiation strategy had significant differential effects on operational performance. This table showed at the 0.05 significance level. Therefore, differentiation strategy was a key factor in determining the effect on organizational performance.

**Table 3: type of competitive strategy & organizational performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.058	.442		4.652	.000
Differentiation	.366	.117	.330	3.117	.002
Cost Leadership	.061	.095	.068	.643	.522

For capability of knowledge management, the firms were classified as using an acquisition, conversion, application, and protection capability. The regression was conducted to test each capability of knowledge management and its effect on organizational performance. In Table 4, the regression analysis showed no statistically significant effect on organizational performance among the four capabilities of knowledge management. Results found that Table 4 was not shown at the 0.05 significance level. Comparing the four capabilities of knowledge management, the results had no greater effect organizational performance.

**Table 4: capabilities of knowledge management & organizational performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.223	.407		5.461	.000
Acquisition	.188	.183	.172	1.024	.309
Conversion	.098	.200	.101	.492	.624
Application	.092	.117	.129	.783	.436
Protection	.016	.134	.018	.122	.903

The regression was conducted to test each level of e-business adoption (information, 2) transaction, 3) interaction and customization, and 4) supplier connection) and its effect on organizational performance. As shown in Table 5, the regression procedures found that interaction and customization level of e-business adoption had a significant effect on organizational performance. The results indicated that the interaction and customization level of e-business adoption can enhance organizational performance. Comparing the four levels of e-business adoption, the results had a greater effect organizational performance.

**Table 5: level of e-business adoption & organizational performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.683	.252		10.627	.000
Information	.005	.044	.012	.116	.908
Transaction	-.055	.065	-.102	-.847	.400
Interaction & Customization	.289	.099	.407	2.920	.004
Supplier Connection	.072	.084	.108	.864	.390

## DISCUSSION

The general purpose of this study was to examine the influencing factors of organizational performance. The researcher points out that it is extremely important for firms to identify a differentiation strategy with a greater capability of knowledge management capability and a higher level of e-business

adoption in the knowledge economy era that can create the greatest organizational performance.

The finding suggested that knowledge management and E-business adoption are important determining factors influencing on organizational performance. This study found that differentiation strategy had a better influenced on organizational performance than cost leadership strategy. The interaction and customization level of e-business adoption had better enhance organizational performance than other levels of E-business adoption.

3. Therefore, there were a relationship between knowledge management capability and organizational performance, and relationship between e-business adoption and organizational performance. a firm with a differentiation strategy and a higher level of e-business adoption in the Internet era, creates greater organizational performance. It will also help organizations to find out what are the essential elements to create their value and advance better performance.

### **Limitations and Future Research**

This study will contribute to academic and organizational practices. The study respondents were only from Taiwanese executives who might limit on cultural differences in the management field. Future research need to focus on small and medium-sized enterprise of Taiwan, and then using different models to exam factors.

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