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# Effect of Business Strategy and E—Business Adoption on Financial Performance

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## Abstract

A business strategy associated with e-business adoption is better than one without such an association. This study examined the effect of business organizations use of business strategy type and the adoption of e-business level on financial performance. The entire accessible population of 960 companies was used as a sample. The results are based on 330 companies that provided useable secondary data. The secondary data of 330 firms (34%) was used to analyse the firm's strategy type and e-business level. The hypothesis was proposed that the use of a differentiation strategy and a higher level of e-business adoption, would lead to higher financial performance from the electronic business markets. The hypothesis was partial supported by the results.

**Keywords:** Business Strategy, E-Business Adoption, Financial Performance

## 1. Introduction

Business advantage is a basic factor for a firm to create economic value and improve performance (Evans & Smith, 2004; Porter, 1985; Slater and Olson, 2001). A firm needs to build strategies in order to achieve long term profitability and business advantage (Bartlett & Ghodhsl; 2002; Porter, 1980; Schermerhorn, Cattaneo & Templer, 1995). A business that develops a strategy is stronger than one without a strategy (Porter, 1980). The successful business strategy is determined by its marketplace (Aijo & Blomqvist, 2003), therefore, a firm's developing a new strategy has ensured that it meets market demands.

An organization does not have a business strategy if its projects do not adopt the Internet (Garden, 2000). Today, firms' business strategies supported by the Internet not only create a true competitive advantage (Evans & Smith, 2004), but also reflected long-term profitability. The Internet alone is neither a competitive advantage nor a business strategy, but it is tool to promote business strategies and create economic value for firms (Apigian, 2003; Porter, 2001).

Many organizations use the Internet to do business that is called e-business. E-business has become a huge commerce that has the potential to improve all types of products, support customer service, reduce barriers to entry, and reduces various costs (Duan, 2000; kidd, 2001; Porter, 2001). The use of e-business to support a strategy has a major influence on business

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organization's performance and is highly meaningful (Lai & Wang, 2005; Tallon & Kraemer, 2005). Therefore, a firm's business strategy supported by e-business adoption is more powerful than one without such support, and it becomes a necessity.

In the research stream, there is a gap in linking strategies and the use of e-business adoption to performance (Moore, 2002; Teng, 2000). In the current marketplace, the effect of business strategy and e-business adoption on performance is still a question. The purpose of this study was to analyze recent organizations use of business strategies and e-business adoption, and their effect on financial performance.

## **2. Literature Review**

### **2.1 E-Business Adoption**

E-business is well known as electronic business (e-business) and electronic commerce (e-commerce) as well. Sohn and Wang (1998, 1999) found different levels of Internet usage in the electronic business, and categorized internal factors of usage into four levels: the first level was non-adopters, the second level was planning to adopt, the third level was limited users, and the final level was sophisticated users.

The characteristics or factors of adoption were exhibited in the early stages of adoption of e-business (MacKay, Parent & Gemino, 2004). Teng (2000) listed the essential characteristics of using e-business as: innovation, organization leaders, organization, environment, organizational context, environmental context, and technological context. Business size, business age, business industry, information technology support, information technology budget, and information technology experience were the radical characteristics of non-adopters and adopters of e-business adoption indicated by Goode and Stevens (2000). Gatignon and Robertson (1989) analyzed adoption or rejection behavior for innovation of high technology with four factors: organization/task characteristics, the supply side competitive environment, the adopter industry environment, and decision-maker information-processing characteristics.

Sohn and Wang (1998) categorized the diffusion of e-business into two factors: internal factors (including the existence of a champion, top management support, inclination toward new technology, cost incentive, and absorptive capacity) that predicted the level of adoption, and external factors (including competitors' moves, institutional support, and customer pressure). Sohn and Wang (1998, 1999) found different levels of Internet usage in the electronic business, and categorized internal factors of usage into four levels: the first level was non-adopters, the second level was planning to adopt, the third level was limited users, and the final level was sophisticated users.

The maturity of e-business adoption is positively associated with the level of Internet adoption (Teo & Pian, 2003). Different levels of Internet adoption related to different kinds of



business activities and economic values. Teo and Pian (2003) presented the Levels of Internet Adoption model with five levels of adopters: level 0 – “e-mail adoption”, level 1 – “Internet presence”, level 2 – “prospecting”, level 3 – “business integration”, and level 4 – “business transformation” (p. 80-81). Teo and Pian’s (2003) Internet Adoption model was conducted as the E-business adoption model in this study.

Teo and Pian (2003) defined each level as follows: a) e-mail adoption level - when the company has an e-mail account but does not have a web site, b) Internet presence level - when the company has a web site with very simple information about the firm and brochures, c) the prospecting level - when the company involves limited use of the Internet business, d) business integration level - when the company’s business processes are integrated and incorporated with the Internet, and e) business transformation level - when the company transforms its business to the highest level of Internet adoption. A firm’s level of e-business adoption impacts its competitive advantage (Teo & Pian, 2003), as a firm with a higher e-business adoption level enhances financial opportunities (Sohn & Wang, 1998). A higher degree of e-business adoption leads to better value and advances the performance of the firm (Zhu & Kraemer, 2005).

## 2.2 Business Strategy

Strategies involve different sets of activities that are projected to accomplish a firm’s objectives and long-term goals (Porter, 1996). Strategies are classified into three categories: a corporate strategy involves the overall company aim, a business strategy is used for an individual business unit or organizational unit, and a functional strategy is applied to a company’s departments or functional areas (Apigian, 2003; Formisano, 2003; Jouirou & Kalika, 2004; Narver & Slater, 1990).

Several business strategies were identified as popular strategy typologies (for example, McCarthy (1960) 4Ps classification strategies, Miles and Snow (1978) strategic typology, Porter’s (1980, 1985) generic competitive strategy). McCarthy (1960) introduced the 4Ps classification strategies that consist of four types of strategies: product strategy (the firm’s product or service), price strategy (competing on price), promotion strategy (marketing communications) and place strategy (sales at the right place). Miles and Snow (1978) revealed their strategic typology theory with four types of strategies: defenders, analyzers, prospectors and reactors. McFarlan-McKenney (1983) provided the strategic grid typology of organizations that mapped out four categories: factory, support, turnaround and strategic.

Porter’s (1980) generic competitive strategy was a widely used strategic typology with academic and practical implication. Porter (1980) introduced his seminal theory of successful competitive strategies involving three elements that create a competitive advantage: (a) cost leadership, a firm targets becoming cost leader in its industry, (b) differentiation, a firm seeks being unique and different in its market, and (c) focus, a firm involves concentrating on a



particular group of buyers, market segment, or product lines.

Business strategy is the source of competitive advantage (Porter, 1980). Porter (1985) stated that competitive strategy is embodied in the five competitive forces. Porter (1985, 2001) presented the five competitive forces concept as the important factor for strategy planning in industry environment. The five constructs forces included “the bargaining power of buyers”, “the bargaining power of suppliers”, “the entry of new competitors”, “the threat of substitutes”, and “the rivalry among the existing competitors”. Organizations that were a source of competitive advantage could play the role of value creation and drive a better performance (Porter, 1980, 1985).

Porter’s (1980) generic competitive strategy (cost leadership and differentiation) was commonly used by businesses to achieve and maintain competitive advantage. Therefore, Porter’s (1980) generic strategy was conducted as the business strategy theory in this study.

### **2.3 Financial Performance**

Various literature studies conducted financial performance measurements reflected by ratios, such as return on assets (ROA), return on investment (ROI), return on equity (ROE), and market share (Yamin, Gunasekaran & Mavondo, 1999). Profitability ratios measure the profit of a firm in relation to the amount of resources used, such as profit margin, return on equity (ROE) and return on assets (ROA) (Ross, Westerfield & Bradford, 2003). Lai and Wong (2005) indicated that “the web site online financial reports of all Growth Enterprise Market (GEM) companies in 2001 were evaluated for three financial performance indicators: Profit margin (PM), return on assets (ROA), and return on equity (ROE)” (p. 82).

The DuPont financial analysis model is a powerful tool to evaluate a firm’s financial performance (Milbourn & Haight, 2005; Scott, Martin, Petty & Keown, 1998). The DuPont model uses the balance sheet and income statement of a firm to evaluate firm profitability (Dehning & Stratopoulos, 2002; Eisemanann, 1997; Milbourn & Haight, 2005; Soliman, 2003). The DuPont analysis consists of four component ratios: profit margin (PM), asset turnover (ATO), return on assets (ROA), and return on equity (ROE) (Brown, Fuller & Kirby, 1999). The DuPont financial analysis model was used as the financial performance in this study.

### **2.4 Strategy, E-Business and Performance**

Competitive advantage of organizations is an extremely important way to improve firm performance and to achieve firm long-term success (Evans & Smith, 2004; Porter, 1985). A firm’s sustainable competitive advantage can be ensured by their selecting and implementing strategies (Bartlett & Ghodhsl, 2002; Schermerhorn, Cattaneo & Templer, 1995; Porter, 1985; Slater & Olson, 2001). Business strategy is a resource for a firm to achieve a competitive advantage over other companies (Bartlett & Ghodhsl, 2002; Slater & Olson, 2001). The



Internet is a powerful tool to create an industry structure that provides a better opportunity to establish strategic positioning of organizations (Porter, 2001). The use of the Internet routinely, can create economic value and help gain traditional competitive advantages (Porter, 2001). Businesses need to develop strategies using the Internet to be innovative in sustainable ways (Evan & Smith, 2004; Porter, 2001).

Porter (2001) asserted that business strategy, combined with the use of the Internet, allowed a firm to build a competitive advantage and create excellent economic value. Lages et al. (2004) stated that an e-marketing strategy and other types of strategy chosen by a company, might lead to great performance. Kamssu, Reithel and Ziegelmayr (2003) mentioned that an Internet strategy combined with a business strategy had a marked effect on financial performance of organizations.

### 3. Methodology

#### 3.1 Theoretical Framework

Based on the literature, the theoretical framework developed for the study was used Porter's (1980) generic strategy, Teo and Pain's (2003) e-business adoption level model and the DuPont financial analysis model. The type of business strategy focused on two generic strategy types; namely, cost leadership strategy and differentiation strategy (Porter, 1980). The level of e-business adoption focused on the three of e-business adoption level model that includes the prospecting level of e-business adoption, the business integration level of e-business adoption and the business transformation level of e-business adoption (Teo & Pain, 2003). Financial performance focused on four of the DuPont financial ratios, namely, profit margin (MP), asset turnover (ATO), return on assets (ROA), and return on equity (ROE). This framework proposed that the type of business strategy and the level of e-business adoption have a great effect on financial performance (Figure 1).

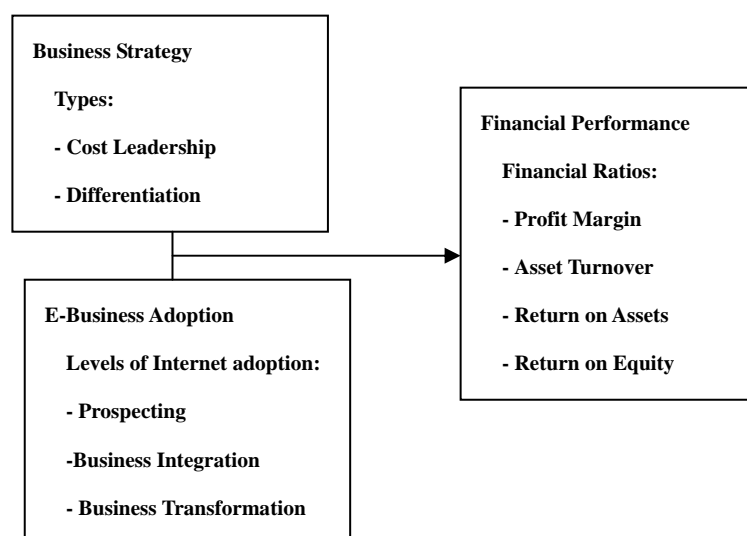


Figure 1 Proposed Model



### 3.2 Sampling Plan

The 960 U.S. companies were selected from the Hoover's In-Depth 2006 records with annual sales between \$ 50 million and \$ 200 million, and with 3-digital SIC codes of 737 (computer programming, data processing, and other computer-related services) and 357 (computer and office equipment). The researcher used the Internet to collect secondary data. Of the 960 companies, there were 330 with valid data collected and 630 companies with invalid data collected. These 630 companies were either missing an annual report (not a publicly listed company), or didn't have a website. Valid data gathered from 330 of the 961 companies were found to be usable.

### 3.3 Measurement

Analysis Of Variance (ANOVA) is a flexible statistical technique to test a hypothesis. A 2 x 3 factorial research design with both qualitative and quantitative methods was used in this study. Factorial research designs contain "every possible combination of the levels of independent variables" (Kepple, 1991, p. 185). This study used secondary data to analyze a firm's strategy type and Internet business adoption level, and used the DuPont Financial Analysis Model to measure a firm's financial ratios. The independent variables were business strategy factors with two types of competitive strategies (included were cost leadership and differentiation) and e-business adoption factor with three levels of e-business adoption (including prospecting, business integration, and business transformation).

The dependent variable was financial performance with four ratio components of the DuPont financial analysis model (including profit margin (PM), asset turnover (ATO), return on assets (ROA), and return on equity (ROE)). A higher ratio indicated better financial performance that revealed the success of a firm. Four financial ratios formulas were as follows (Brown, Fuller & Kirby, 1999):

$$\text{Profit margin (PM)} = \text{net income} / \text{sales}$$

$$\text{Asset turnover (ATO)} = \text{sales} / \text{total assets}$$

$$\begin{aligned} \text{Return on assets (ROA)} &= [\text{net profit margin}] * [\text{total asset turnover}] \\ &= [\text{net income/sales}] * [\text{sales/total assets}] \end{aligned}$$

$$\begin{aligned} \text{Return on equity (ROE)} &= [\text{net income/sales}] * [\text{sales/ total assets}] * [\text{total assets/total equity}]. \\ &= [\text{net income/ total assets}] * [\text{total assets/total equity}]. \end{aligned}$$

The secondary data was the sources of information to determine the organizations' strategy types and e-business adoption levels for each firm. A paragraph approach for content analysis was the tool used to measure a firm's business strategy type and e-business adoption level, and the four financial ratios were calculated by the DuPont analysis formula. The sources of data included the firm's websites, annual reports for the 2005 fiscal year, various web search engine, Securities and Exchange Commission (SEC) Filings and the EDGAR



online database with publicly available financial, strategy and e-business adoption information. These secondary data required accurate reporting and the legal requirement that they were considered highly trustworthy and reliable.

The paragraph description of strategy type based on Porter's definition of cost leadership strategy or differentiation strategy was used in a modified version of strategy type by Homburg, Krohmer and Workman (1999), Kumar and Subramanian (1998), and Obilade (2002). The paragraph description of e-business adoption level used the paragraph definition based on Teo and Pian's (2003) levels of e-business adoption. The paragraph content analysis was used to identify the similar content of paragraph into the classified groups.

Two independent variables were types of strategy and levels of e-business adoption that were classified as factor A and factor B. Factor A had two types of strategy including A1- cost leadership strategy or A2 - differentiation strategy. Factor B had three levels of Internet business adoption including B1 - prospective level, B2- integration level or B3 - transformation level. Through content analysis of secondary data, a firm's types of strategy was classified as either A1 or A2; the levels of Internet adoption was classified as B1, B2, or B3; and financial performance was measured by four ratios included PM, ATO, ROE and ROA.

A 2x3 factorial ANOVA was used to examine the effects of main factors on financial performance in this study. Two independent variables (types of strategy and levels of e-business adoption) were factor A and factor B. The factorial ANOVA statistically described the interaction of the two main factors (A and B) that affected the dependent variables. A 2x3 factorial ANOVA showed two main factors crossed with each other to create six pairs.

This interaction of the two main factors involved six combination groups of variables: A1\*B1 (cost leadership \* prospecting), A1\*B2 (cost leadership \* business integration), A1\*B3 (cost leadership \* business transformation), A2\*B1 (differentiation \* prospecting), A2\*B2 (differentiation \* business integration), and A2\*B3 (differentiation \* business transformation). Therefore, a firm with a cost leadership strategy and a prospecting level of e-business adoption was classified as Group 1 (A1\*B1), a firm with a cost leadership strategy and a business integration level of e-business adoption was classified as Group 2 (A1\*B2), a firm with a cost leadership strategy and a business transformation level of e-business adoption was classified as Group 3 (A1\*B3), a firm with a differentiation strategy and a prospecting level of e-business adoption was classified as Group 4 (A2\*B1), a firm with a differentiation strategy and a business integration level of e-business adoption was classified as Group 5 (A2\*B2), and a firm with a differentiation strategy and a business transformation level of e-business adoption was classified as Group 6 (A2\*B3), as shown in Table 1. These six combination groups were utilized to compare their different financial performance (profit margin, asset turnover, return on assets, and return on equity) among groups.



**Table1 2 x 3 Factorial Design**

Adoption(Factor B)	Strategy (Factor A)	
	A1 = Cost leadership	A2= Differentiation
B1 = Prospecting	A1*B1 = firm performance	A2*B1 = firm performance
B2 = Integration	A1*B2 = firm performance	A2*B2= firm performance
B3 = Transformation	A1*B3 = firm performance	A2*B3 = firm performance

A 2x3 factorial ANOVA used to determine the effects of two strategy types and three e-business adoption levels on four financial ratios. Four ratios (profit margin, asset turnover, return on assets, and return on equity) were used to analyze financial performance of organizations in this study. The average financial ratios in each of these six combination groups were compared to analyze financial performance of the firms. A high average financial ratio indicates greater profitability of a firm. Greater profitability means better financial performance of organizations. The hypotheses compared each group’s financial performance.

**4. Results**

The results are based on 330 companies that provided useable secondary data. The statistical descriptive analysis of strategy types revealed that 55.2 percent of the companies used a differentiated strategy and 44.8 percent had adopted a cost leadership strategy. The statistical descriptive analysis of e-business adoption levels revealed that 47.3 percent used a business transformation level, while 36.4 percent used a business integration level, and 16.4 percent used a prospecting level, as shown in Table 2.

**Table 2 Frequencies of Types of Competitive Strategies and E-Business Adoption**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cost Leadership	148	15.4	44.8	44.8
	Differentiation	182	19.0	55.2	100.0
	Total	330	34.0	100.0	
Valid	Prospecting	54	5.6	16.4	16.4
	Integration	120	12.5	36.4	52.7
	Transformation	156	16.3	47.3	100
	Total	330	34.0	100.0	

Of the combination groups, 29.7 percent were matched to Group 6 (a firm with a differentiation strategy and a business transformation level of e-business adoption).





**Table 3 Frequencies of Distribution Groups**

Groups	Frequency	Valid Percent	Cumulative Percent
Valid Group 1(Cost and Prospecting)	25	7.6	7.6
Group 2 (Cost and Integration)	65	19.7	27.3
Group 3 (Cost and Transformation)	58	17.6	44.8
Group 4 (Differentiation and Prospecting)	30	9.1	53.9
Group 5 (Differentiation and Integration)	54	16.4	70.3
Group 6 (Differentiation and Transformation)	98	29.7	100.0
Total	330	100.0	

Analyzing the profit margin (PM) ratio, Table 4 reflected a higher mean for the profit margin (PM) ratio for the differentiation strategy, and business integration level, and business transformation level of Internet adoption. The results indicated that a firm's profit margin ratio higher on differentiation strategy than cost leadership. Additionally business integration level and business transformation level of Internet adoption should be taken into account.

**Table 4 Descriptive Statistics of Profit Margin**

Variables	Mean	Std. Deviation
<b>Types of Competitive Strategy</b>		
Cost Leadership	-3.96959	2.4635
Differentiation	2.876	2.14068
<b>Level of Internet Business Adoption</b>		
Prospecting	-3.40539	3.02867
Business Integration	2.8952	1.78490
Business Transformation	2.269	2.33766

In analyzing the asset turnover (ATO) ratio, two strategy types and three Internet business adoptions showed higher means. The asset turnover (ATO) ratio appeared to be higher on cost leadership strategy or business prospecting level of Internet adoption than differentiation strategy, business integration level, or business transformation level of Internet adoption, as shown in Table 5.

**Table 5 Descriptive Statistics of Asset Turnover**

Variables	Mean	Std. Deviation
<b>Types of Competitive Strategy</b>		
Cost Leadership	6.4602	8.5354
Differentiation	3.9248	6.47681
<b>Level of Internet Business</b>		



Variables	Mean	Std. Deviation
<b>Adoption</b>		
Prospecting	6.7236	9.0215
Business Integration	4.3368	6.48261
Business Transformation	5.0445	7.74602

Analyzing the return on assets (ROA) ratio, two strategy types and three E-business adoptions indicated lower means, as shown in Table 6. The results indicated that the return on assets ratio was higher for a firm with a business integration level of Internet adoption rather than a firm with prospecting or business transformation level of Internet adoption.

**Table 6 Descriptive Statistics of Return on Assets**

Variables	Mean	Std. Deviation
<b>Types of Competitive Strategy</b>		
Cost Leadership	-3.87500	1.2506
Differentiation	7.415	1.30870
<b>Level of Internet Business Adoption</b>		
Prospecting	-3.10807	2.4942
Business Integration	1.269	5.78949
Business Transformation	5.96	1.02803

For the levels of Internet adoption, the prospecting level of Internet adoption had a higher return on equity (ROE) ratio than the business integration or business transformation levels of Internet adoption. Results indicate that the cost leadership strategy had a higher mean and standard deviation than the differentiation strategy, as shown in Table 7.

**Table 7 Descriptive Statistics of Return on Equity**

Variables	Mean	Std. Deviation
<b>Types of Competitive Strategy</b>		
Cost Leadership	3.167	-1.56672
Differentiation	3.55638	1.28236
<b>Level of Internet Business Adoption</b>		
Prospecting	9.0257	5.85519
Business Integration	6.099	6.48853
Business Transformation	-6.06477	1.29418



Comparing among the six combination groups, Table 8 revealed that Group 5 (a firm with a differentiation strategy and a business integration level of Internet adoption) had the highest mean for the PM ratio; Group1 (a firm with a cost leadership and a prospecting level of Internet adoption) had the highest mean for the ATO ratio; Group 5 had the highest mean for the ROA ratio; and Group 1 had the highest mean for the ROE ratio.

A higher mean for the ratios indicated a higher level of performance; a negative mean for the ratios indicated a lower level of performance. Analyzing the four ratios among the six combination groups, the results revealed higher means in the asset turnover (ATO) and return on equity (ROE) ratios. These findings suggested that a firm with a competitive strategy type and Internet business adoption level impacted financial performance.

**Table 8 Means of PM, ATO, ROA, and ROE Ratios in Groups**

Ratios	Groups	N	95% Confidence Interval for Mean						
			Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Profit margin (PM)	1	25	-2.8420	.1911	.0382	-1.0732	5.0489	-5.215	.4083
	2	65	1.7708	.2292	.0284	-3.9094	7.4512	-9.8658	.9608
	3	58	-8.6089	.2852	.0374	-8.3599	6.6381	-1.3582	.8372
	4	30	-3.6094	.3709	.06772	-1.7459	1.0241	-1.9112	.2462
	5	54	4.218	.08794	.01196	1.8175	6.6185	-1.4002	.3144
	6	98	4.1224	.1964	.01984	1.8394	8.0609	-1.1753	.5517
	Total	330	1.5685	.2292	.01261	-9.1365	4.0507	-1.9112	.9608
Asset turnover (ATO)	1	25	8.0127	.8691	.1738	4.4251	1.16	-2.8288	2.9521
	2	65	4.7087	.6021	.0746	3.2166	6.2009	-5.9523	2.3255
	3	58	7.7539	1.0445	.1371	5.0074	1.05	-2.012	5.1041
	4	30	5.4253	.9198	.1679	1.9905	8.86	-1.7921	3.9934
	5	54	3.9693	.7064	.09613	2.0411	5.8976	-1.1154	3.1467
	6	98	3.441	.4977	.0502	2.443	4.4389	-6.3492	2.1195
	Total	330	5.0619	.7564	.0416	4.2427	5.8811	-2.012	5.1041
Return on assets (ROA)	1	25	-3.259	.1743	.0348	-1.0454	3.9359	-6.0389	.2671
	2	65	9.957	.0608	.0075	-5.1151	2.5029	-1.8219	.1736
	3	58	-6.9989	.1509	.0198	-4.6701	3.2703	-7.8022	.3151
	4	30	-2.8786	.2976	.0543	-1.3992	8.235	-1.5725	.2519
	5	54	1.6224	.055	.0074	1.1919	3.1256	-1.067	.31
	6	98	1.3644	.0577	.0058	2.0747	2.5214	-1.6469	.2257
	Total	330	2.352	.1282	.007	-1.1533	1.6237	-1.5725	.3151
Return on equity (ROE)	1	25	1.6917	8.4537	1.690	-1.7977	5.1813	-1.7862	4.2161
	2	65	5.5024	.8733	.1083	-1.61375	2.7142	-2.5576	6.0194
	3	58	1.7429	.82	.1076	-1.9819	2.33054	-3.2	4.0076
	4	30	2.1586	1.5852	.2894	-3.7608	8.0781	-3.0688	8.0316
	5	54	6.872	.1554	.0211	2.6277	1.1116	-3.6937	.6487
	6	98	-1.0685	1.5084	.1523	-4.0928	1.9556	-1.4742	.66312
	Total	330	1.412	2.5653	.1412	-1.366	4.19	-1.4742	4.2161



The study made observations the factorial ANOVA statistically described the different levels of the main factor A and B effect the dependent variables. The factorial ANOVA tables illustrated the interaction of competitive strategy and Internet business adoption on the four performance ratios. The factorial ANOVA was employed to examine which combination groups had significant differences (F-values, p-value) from the other groups.

A two-way ANOVA showed significant of six groups on the four financial ratios. In Table 10 showed the interaction of strategy and Internet business adoption level on PM. The results revealed no significant difference on the PM profit margin (PM) ratio. The interaction of strategic types and Internet business adoption levels had no guaranty for a higher PM performance. This finding suggested a firms' profit margin was not dependent on a firm's competitive strategy and Internet business adoption.

**Table 9 Factorial ANOVA Tests of Between-Subjects Effects (Groups \* PM)**

Source	Type III		Mean Square	F	Sig.
	Sum of Squares	df			
Corrected Model	.272 <sup>a</sup>	5	.054	1.037	.396
Intercept	.005	1	.005	.090	.765
S	.030	1	.030	.573	.449
I	.153	2	.076	1.456	.235
S * I	.037	2	.019	.355	.702
Error	17.013	324	.053		
Total	17.367	330			
Corrected Total	17.285	329			

a. R Squared = .016 (Adjusted R Squared = .001)

In Table 11 showed the interaction of strategy and Internet business adoption level on ATO. The two-way ANOVA showed significant of six groups on the four financial ratios. The results revealed competitive strategy a significant difference in the ATO ratio. This finding suggested a firms' Asset turnover was not dependent on a firm's competitive strategy and Internet business adoption.



**Table 10 Factorial ANOVA Tests of Between-Subjects Effects (Groups \* ATO)**

Source	Type III Sum		Mean Square	F	Sig.
	of Squares	df			
Corrected Model	9.870 <sup>a</sup>	5	1.974	3.585	.004
Intercept	82.461	1	82.461	149.762	.000
S	4.179	1	4.179	7.590	.006
I	2.541	2	1.271	2.307	.101
S * I	2.022	2	1.011	1.836	.161
Error	178.399	324	.551		
Total	272.826	330			
Corrected Total	188.269	329			

a. R Squared = .052 (Adjusted R Squared = .038)

The observation of interaction of the two factors as they effect on return on assets (ROA) was shown in Table 11. As shown in Table 12, factorial ANOVA found that the two factors had no significant different effect on return on assets. This factorial ANOVA testing result suggested that the interaction of strategic types and Internet adoption levels had no guaranty in higher ROA performance.

**Table 11 Factorial ANOVA Tests of Between-Subjects Effects (Groups \* ROA)**

Source	Type III Sum		Mean Square	F	Sig.
	of Squares	df			
Corrected Model	.092 <sup>a</sup>	5	.018	1.120	.349
Intercept	.007	1	.007	.400	.527
S	.006	1	.006	.389	.533
I	.073	2	.037	2.236	.108
S * I	.005	2	.002	.150	.860
Error	5.318	324	.016		
Total	5.411	330			
Corrected Total	5.410	329			

a. R Squared = .017 (Adjusted R Squared = .002)



The factorial ANOVA in Table 12 revealed the interaction of competitive strategies and Internet business adoption on ROE. This table showed no significant different effects of competitive strategy and Internet business adoption on ROE. The one-way ANOVA showed significant of E-business adoption on ROE ratio. The results revealed a significant difference in the ATO ratio. This finding suggested a firms' ROE was dependent on E-business adoption.

**Table 12 Factorial ANOVA Tests of Between-Subjects Effects (Groups \* ROE)**

Source	Type III Sum		Mean Square	F	Sig.
	of Squares	df			
Corrected Model	67.995 <sup>a</sup>	5	13.599	2.101	.065
Intercept	27.996	1	27.996	4.325	.038
S	18.444	1	18.444	2.850	.092
I	41.372	2	20.686	3.196	.042
S * I	22.410	2	11.205	1.731	.179
Error	2097.161	324	6.473		
Total	2171.735	330			
Corrected Total	2165.156	329			

a. R Squared = .031 (Adjusted R Squared = .016)

## 5. Conclusions and Recommendations

The study demonstrated that the interact use of business strategy type and level of e-business adoption were the factors influencing on ATO and ROE of U.S. business organizations. The study demonstrated that firms with a competitive strategy had increased on their ATO ratio, firms with an E-business adoption had increased on their ROE ratio. The hypothesis was partial supported by the results. The findings only partial supported Porter's (1980) generic strategies theory and Teo and Pian's (2003) level of e-business adoption model. Therefore, the study concluded that the use of business strategy or the e-business adoption in organizations can be the factor influencing on their value and financial performance. Firms adopted business strategy or the e-business adoption may benefit in the cyber or the real world market.

This study, which was theoretically based, has implications for both practical application and expanding the knowledge base in the academic world. The results of this study extend to the practices used in the real business world and can contribute to the functioning of business managers. The study findings suggested that a firm with e-business adoption allows it to create new business opportunities and increased on its ROE value, and with competitive strategy increased on its ATO value. Firm can maximize their profitability and by using



competitive advantage and e-business adoption. The study results revealed that a firm interactive using competitive strategy and E-business adoption was the part of the reasons in creating a better profitability. Therefore, a firm's using competitive strategy or E-business adoption that can successfully helping its financial performance. A firm interactively using the competitive strategy and E-business adoption may be the factors to effect on its financial performance.

The limitation of this study was that it used selected U.S. business organizations. In addition, the use of secondary data to compare each group may have been affected by errors in the archival data. The six combination groups were not of equal size for the purpose of comparison and that may also have limited the results of the study. The experimenter recommends that future studies test the 4Ps strategy in areas located outside of the U.S. and with a larger sample size, in addition to more than one researcher being used to obtain and code the data.



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