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## **Business Resources Impact on E-Commerce Capability and E-Commerce Value: An Empirical Investigation**

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### **ABSTRACT**

Many firms around the world have embraced E-commerce as a strategic marketing tool to enhance the competitive advantage and organizational performance. From the last two decades, E-commerce has obtained prominent importance and it is considering as a key dimension to a firm value. Most of the firms have invested prominently in this technology to compete in the fast faced business environment. But many firms are still lacking in getting the advantages of E-commerce technology. Most of the research has been conducted to generate the strategies for E-commerce success but still many firms are facing difficulties in generating E-commerce value. In this study, the researchers proposed a model that provides brief explanations of how to generate E-commerce value. This study shows the business resources (innovative capacity, market orientation and strategic flexibility) impact on E-commerce capability that contributes significantly to the organizational performance. Data from 287 manufacturing firms were collected using personally administered and online survey approach. The results showed that innovative capacity, marketing orientation and strategic flexibility are the key predictors of E-commerce capability that leads to better business performance. In this study E-commerce value measured by the financial and non-financial performance of the firm at the post E-commerce implementation level. The results indicate that market orientation, innovative capacity and strategic flexibility shape the development of E-commerce capability and its combination together with E-commerce capability contribute to organizational performance in digital business environment. To the practitioners, this study provides a checklist for the managers that could be very effective in making decisions and strategies for the usage and implementation of E-commerce. To the literature, this study introduced a new theoretical foundation that how firms utilize their business resources when they enter in the online business environment.

**Key words:** E-commerce, business resources, marketing, capability, strategies

### **INTRODUCTION**

Internet has brought changes and competition in today's businesses around the world. Most of the businesses and consumers have influenced by this technology from the last two decades. Dowlatshahi and Cao (2006) have been pointed out that global business competition has characterized by the innovative processes, customer requirements and product/services proliferation

with greater quality and customization. In today's business turbulence environment organizations need more strategically viable than ever before. Organizations must meet effectively with turbulence environment to gain and sustain the competitive advantages. Most of the firms rely on the Information Communication Technologies (ICT) to counter these challenges. E-commerce is one of the important technologies that bring new ways to enhance organizational processes. From the last two decades E-commerce has achieved prominent reputation in the business community around the world. Most of the firms rely on this technology to amply their business activities and enhance competitive advantage. E-commerce is an important tool that provides opportunities for organizations to develop idiosyncratic strategic positions. It is the core element of business strategies to generate value by allowing organizations, suppliers, customers and consumers to exchange information about product and services and make transactions. Numerous potential benefits of Electronic commerce are discussed in the IT/IS literature. EC improves productivity by providing good quality and performance through the effectiveness in business processes redesign. Furthermore, Romero and Rodriguez (2010) stated that EC reduces data processing errors, cost and fewer inventories. Especially E-Commerce has potential to provide and facilitate effective and efficient operations of supply chain. With all these attractions, E-commerce also holds challenges that caused its failure. Most of the researchers argued that E-commerce implementations need proper strategies and the deployment of organizational resources (Lee *et al.*, 2010; Ordanini and Rubera, 2010). Firms need to mingle their business resources in specific way for the specific business environment. This advanced skill ensures the firms to combat the future challenges as well. Rapid changes of the business environment push the firms to develop capabilities that can provide the chance of survival and sustain competitive advantage. However, idiosyncratic resources alone are not enough to ensure better outcomes, it depends on how the firm allocates and utilize the resources (Barney, 1991). Limited resources can also create the organizational conflict (Henry, 2009). Gulati and Garino (2000) argued that IT resources must be complemented with business and human resources to manage IT Tools and application efficiently. IT, business and Human resources alignment would be very effective to improve business processes, serve the customers efficiently and to enhance productivity. The utilization of organizational resources would be very affective in enhancing organizational performance (Henry, 2009). Business resources are one of the main elements of organizational resources. Firms often utilize business resources to develop strategies and to overcome the challenges. Business resources attributes has been discussed widely in the field of strategic management and marketing. This paper provides the three main attributes of business resources that contribute to E-commerce value. In this paper market orientation, innovative capacity and strategic flexibility were chosen for the development of E-commerce capability that leads to E-commerce value.

## **MATERIALS AND METHODS**

**Theoretical foundation and hypotheses development:** The rapid growth of ICT use for business functions has a noticeable effect on numerous firms' business strategies and performance. Many firms are developing new strategies and capabilities to be vibrant in markets. Technological capabilities have a significant influence on firm performance in the dynamic and turbulence business environments (Zhuang and Lederer, 2006). In the early 1990s Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT) have been developed in the field of strategic management. Resource based theory stresses on the nature of the resources and its characteristics

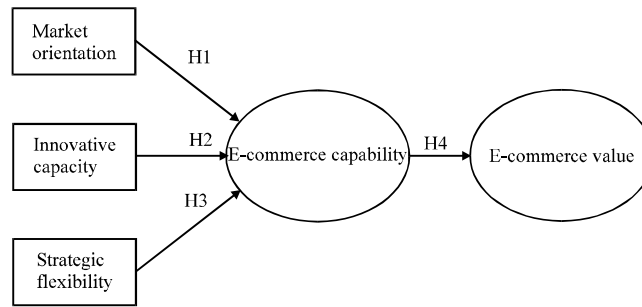


Fig. 1: Research model

that make them strategically vital, while the dynamic capability theory focuses on how these resources integrates, reconfigures and deploy to maintain their market significance as well as meet with new market challenges. Recently, both of the theories have been widely adapted in the IT/IS research streams. However, numerous capabilities have been developed for IT/IS functions to derived its impact on firm's performance. The superior IT capabilities provide better and sustainable benefits to the firm (Broadbenta *et al.*, 1999). However, IT is not capable to preserve the competitive advantage in itself, together with business and human aspects are justifying the existence of co-specialized strategic assets. With this in mind, we proposed a framework that provides a foundation for business resources attributes and E-commerce capability. Theoretical framework has shown in Fig. 1. Framework also shows the hypotheses paths of the attributes.

Theoretical model has been developed to test the business resources affect on the e-commerce capability and business performance. Business resources attributes such as market orientation, innovative capacity and strategic flexibility have been deployed for the development of E-Commerce capability that brings E-commerce value.

**Market orientation:** Market orientation has appeared as a critical subject with many opportunities in the marketing and strategic management research. Market orientation is an inner ideology of marketing (Santhanam and Hartono, 2003). However, Market orientation is a deep-seated feature of the firm. Market orientation refers to the ability to sense and respond to customer needs. However, Market orientation corresponds to firm level resource that organizations use to develop marketplace strategies (Laforet, 2008) and to meet the organizational exterior atmosphere (Day, 1994). Further, they described that market orientation consists of customer orientation, competitive orientation and interventional coordination with long term focus and profit focus. The reason of proposing a market orientation, a firm developed a positive reception for understanding present and potential customer requirements to provide superior customer value; pursuing the methodical aligning and sharing of information regarding potential customers and competitors to counter customer requirements and competitor actions in order to develop opportunities and thwart threats (Slater and Narver, 1996). In the E-commerce environment firms need to have a strong market orientation. Therefore we have proposed the hypotheses:

- **H1:** Market orientation significantly explains the variance in E-commerce capability

**Innovative capacity:** Recently most of the studies have emphasized on better combination of the new initiatives with the rest of the organization to gain sustainable competitive advantage

(Hunt and Morgan, 1995). Furthermore the author explained that such resource influence has to be attained without the culture, norms and business practices of the core organization hindering the new initiatives. However, when organizations seek to be swift by leveraging IT platforms, the need for combination between the operations of the core organization and the new initiatives is even superior because of the need to administer the efficient conversion from the old business model to the new business model (Govindarajan and Trimble, 2005). Innovative capacity of firms could vary in conditions of how they develop and commercialize innovations. However, new initiatives can be commercialized successfully if it separated from the core organization (Gulati and Garino, 2000). E-commerce itself is an innovative technology that needs innovative processes to get desirable results. Therefore we proposed the following hypotheses:

- **H2:** Innovative capacity significantly explains the variance in E-commerce capability

**Strategic flexibility:** Strategic flexibility has been used widely in the marketing and strategic management research streams. According to Johnston and Mark (2000), strategic flexibility allows the firm to react to and produce environmental changes (Christensen, 1997). Strategic decisions in organization need to retrace for the efficient response to cope changes in the competitive environment (Johnston and Mak, 2000). However, this needs the flexibility by the firm that permits to counter the market threats and opportunities in a proactive or reactive approach. Strategic flexibility has discussed under the subject of organizational capabilities, risk management and strategic management (Young-Ybarra and Wiersema, 1999). This approach also uncovered in the strategic alliance, value chain and supply chain agility. However, E-commerce implementation brings changes in business process. Therefore we have proposed the following hypotheses:

- **H3:** Strategic flexibility significantly explains the variance in E-commerce capability

**E-commerce capability and e-commerce value:** The deployment of E-commerce could increase the effective and efficient order processing system, provides just-in-time inventory management that helps to reduce cost and customized products and services (Grewal and Tansuhaj, 2001). E-commerce implementation outcomes would be low inventory cost, prompt data exchange and rapid response system to the customers changing requirements (Saffu and Walker, 2008). E-commerce would benefits to purchasing practices, such benefits are cost savings, shorter order cycle time and the enhancement of the partnership between customers and suppliers. E-commerce also enhances the efficiency of supply chain through offering real-time info about product availability, shipment status, production obligation and inventory level (Teo and Ranganathan, 2004). In this study E-commerce value has been measured by the financial and non-financial performance of the firm at post E-commerce implementation level. Therefore, we have developed the following hypotheses:

- **H4:** E-commerce capability significantly explains the variance in E-commerce value

**Methodology:** Five hundred firms have been selected randomly from the online database of Malaysian firms. Multi mode survey techniques were followed to increase the response rate. Online survey approach and personally administered technique were chosen for the survey.

The target population of the study was Malaysian manufacturing firms that must involve in online business. Top management of the firms was contacted for the response of the survey because top management mostly involved in the decision making processes. We believe that these respondents reveal an accurate representation of the firms. At the end of the data collection process 287 complete responses were received. Data were then analyzed for validation by using SPSS version 11.5.

## **RESULTS AND DISCUSSION**

**Demographics:** Total 312 respondents responded out of 500. Data from 25 respondents were incomplete so discarded. Finally, 287 respondents were used for the analyses. Statistical analyses were performed using SPSS 11.5 to test the reliability and hypotheses testing. Regression analysis was taken to test the hypothesis of this study. Regression analysis is one of the most common and appropriate method for hypothesis testing. Companies' information was also asked in the survey. Table 1 shows the summary of company's information.

Most of the companies were well networked and had better internet facilities. Respondents were also asked to provide firm's full time employees, annual average revenue; annual average revenue generated using E-commerce technology and E-commerce experience.

Table 2 shows a summary of the general information of the respondents. Most of the respondents were male, highly educated and hold key positions.

**Construct reliability:** Cronbach's alpha was performed to test internal consistency reliability of the each variable. It measures the extent to which items are free from random error that affects on the results. Table 3 presents the variable, number of indicators of each variable and Cronbach's alpha. Most of the constructs have achieved the acceptable Cronbach's alpha ( $>0.70$ ).

**Hypotheses testing:** The model was tested then after construct reliability using regression analysis. The model consist four hypotheses and all were tested by using SPSS 11.5. All four hypotheses found to have a significant effect. Market orientation and strategic flexibility appeared to be the strongest predictors of E-commerce capability. Table 4 shows the regression results of the hypotheses.

- **H1:** Value of 'R' for hypothesis H1 is 0.723. This means that strong correlation exists between market orientation and E-commerce capability. R-square value is 0.462 which shows that if one unit of independent variable increases then 0.462 units of dependent will increase. P-value is less than 0.05 thus hypothesis is supported at F (74.19) and  $p < 0.05$ . Customer participation and involvement in the marketing innovation process significantly contributes in business performance (Alsamydai *et al.*, 2010)
- **H2:** The R value of hypotheses H2 is 0.658 which shows that there is moderate correlation exists between innovative capacity and E-commerce capability. R-square value is 0.427 and p-value is 0.000 thus the hypotheses is significant at F (77.19) and  $p < 0.05$ . It shows that innovative capacity has a significant impact on the E-commerce capability. Innovation management ability has also a positive impact on product development (Liu and Tsai, 2007) that ultimately affects organizational performance
- **H3:** Hypotheses three also shows the significant impact of the strategic flexibility on E-commerce capability. Results show the R value is 0.837 which means there is a strong correlation between Trust and consumer behavior. R-square value is 0.599 and p-value is less

Table 1: Company general information

Factors	No. of employees
<b>Full time employees</b>	
Less than 50	60
50-100	55
100-200	74
200-300	54
300-500	26
More than 500	18
<b>Annual average revenue</b>	
Less than RM500,000	17
500,000-RM1Million	33
RM1Million-RM10Million	75
RM10Million-RM25Million	83
RM25Million-RM50Million	58
RM50Million-RM1Billion	8
More than RM1Billion	11
<b>Annual average EC transactions</b>	
Less than 100,000	50
RM100,000-RM20,000	66
RM200,000-RM50,000	93
RM500,000-RM1Million	54
RM1Million-RM10Millions	20
More than RM10Millions	4

Table 2: Demographics of the respondents

Factors	No.
<b>Gender</b>	
Male	162
Female	125
<b>Position</b>	
CEO	68
Director	64
General manager	53
IT manager	54
Business manager	48
<b>Education</b>	
Ph. D	8
Master	87
Bachelor	143
Diploma	49

Table 3: Construct reliability

Constructs	No of indicators	Cronbach's alpha
Market Orientation (MO)	6	0.7129
Innovative Capacity (INNO)	4	0.8228
Strategic Flexibility (STF)	6	0.7136
E-commerce Capability (ECC)	6	0.7664
E-Commerce Value (ECV)	12	0.8183

Table 4: Hypotheses testing

Hypothesis and results	R	R-square	F-value	P-value	Conclusion	
H1: MO -----> ECC	0.723	0.462	74.19	0.000	Significant	Supported
H2: INNO ----->ECC	0.658	0.427	77.19	0.000	Significant	Supported
H3: STF -----> ECC	0.837	0.599	209.05	0.000	Significant	Supported
H4: ECC----->ECV	0.637	0.325	83.36	0.000	Significant	Supported

than 0.05 which shows the significant impact of strategic flexibility on E-commerce capability at f-value (209.05). Strategic planning would likely affect positively on the organizational performance (Taiwo and Idunnu, 2007)

- **H4:** E-commerce capability has a strong correlation on the dependent variable. The R-value is 0.637 which means that there is a strong relationship between E-commerce capability and E-commerce value. R-square is 0.325 and p-value is 0.000 which supported hypotheses at F-value 83.36. Results show the significant impact of E-commerce capability on the E-commerce value. Previous results show that Organizations sustained competitive advantage when they strategically counter the need of customers (Yen *et al.*, 2007)

## CONCLUSION AND FUTURE RESEARCH

This study provided and empirically tested theoretical model that shows the business resources contribution in development an E-commerce capability which is considered a key to enhance business performance. The results indicate that market orientation, innovative capacity and strategic flexibility shape the development of E-commerce capability and to contribute organizational performance in E-commerce environment. This study emphasize that the top management of the firms must pay attention in utilizing organizational resources, most importantly business resources in developing E-commerce business. This study also provides directions to the top management in developing strategies for E-commerce development. Managers should focus on market orientation strategies, Innovativeness of the firm and Strategic flexibility in pre and post E-commerce implementation strategies. The data were collected from the various Malaysian manufacturing organizations, so this model could be consider in other context or in different industry type for the future work. For the future research the model can be extended with mentioning other organizational resources like human and technology resources.

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