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Abstract

Is there a way to avoid trading off one strategic capability for another in e-business? The conventional answer is no. But some early movers such as ebay.com and amazon.com in e-business seem to have been able to defy that: compared to their followers such as uBid.com and buy.com, they have been able to conduct strong focus, differentiation, and cost efficiency strategies. The purpose of this paper is to test the differences in strategic capabilities of e-business companies between early movers and followers. This study reviews prior research on a strategic typology based on Porter's model, as well as a strategic capability based on the sand cone model. A strategic typology is classified as focus, differentiation, and cost efficiency by Porter, and strategic capabilities are assumed to be not trade offs but possessing a cumulative relationship. Results indicate that early movers have more cumulative strategic capabilities than followers do in marketing differentiation, innovative differentiation, and cost efficiency, except for focus strategy. These results are enough for practitioners and entrepreneurs to reexamine the traditional managerial approach – trade offs - in e-strategy.

Introduction

Over the years, e-business has dramatically changed the traditional business environment. According to Forrester research, it is estimated that 9.7 million US households will manage more than $3 trillion in 20.4 million on-line accounts by 2003. Currently e-business is not a choice object but an inevitable one to businesses.

Moreover, Organizational performance analysis has traditionally argued that competitive strategies (focus, differentiation, cost efficiency) enable a firm to earn above-average profits (Porter, 1980, 1985). Other studies have shown that the general notion of competitive environment is a critical factor of the success or failure of firms (Wright, 1987).

In spite of the importance of strategic capabilities, the Internet ironically makes strategy less important because most firms believe that electronic business would provide more chances to earn additional profits (Porter, 2001).

Many studies have revealed that business advantages resulting from Web usage include greater inventory control, improved market reach, customization of products and services, shortened time to market for new products and services, more efficient payment systems, and lower advertising costs (Berthon, et al., 1996; Burstein and Kline, 1995; Jarvenpaa and Todd, 1997; Spar and Bussgang, 1996). Because of the new means of business communications, organizations have recognized that the Web can promote one-to-one customer relationships, thereby increasing loyalty and retention. Marketing professionals regard the Web as a new sales channel that will increase profits via intelligence acquisition, purchasing-cost reduction, and supply-side management (Davy, 1998).

Although theoretical frameworks of traditional firms have discussed the competitive advantage and market positioning issues in e-business strategy, very little empirical research has combined strategic orientations with early movers and followers (Porter, 2001). Therefore, we propose to adapt *Porter's Strategic Topology* and the *Sand Cone Model's* capability explanation, and then use the resulting modifications to help explain the difference in strategic capabilities between early movers and followers in e-business.

Theoretical Background

Porter's Competitive Strategy

Porter (1980) suggested that strategic positioning of a firm determines whether or not its profitability is above or below the industry average. The fundamental basis of above-average performance in the long run pushes firms to maintain their competitive advantage. Porter's argument is that successful businesses should implement at least one of the generic strategies such as cost leadership, differentiation, or focus. Porter (1980, 1985) has distinguished three main strategic orientations. First, firms can compete with their costs of production, to preserve higher margins than their competitors. This cost leadership strategy implies that by doing this firms gain market share and improve their cost structure. Second, firms can choose a differentiation strategy. For instance, they may develop a competitive advantage by gaining customer loyalty either by innovating and upgrading their products or by offering a valued unique image via marketing. Finally, Porter distinguishes the focus strategy, which is the application of either cost leadership or differentiation strategy to more narrowly targeted customers.

McFarlan (1983) and Parsons (1983) applied Porter's framework to assess the strategic impact of information technology (IT) on a firm. Hambrick (1983) showed empirical support for Porter's strategic topology as low cost, differentiation, and focus. Later Dess and Davis (1984) established the construct validity of Porter's typology and concluded that firms pursuing generic strategies exhibited superior performance. Ives and Learmonth (1984) used Porter's three generic strategies as a basis in a new framework. Miller and Friesen (1986) further validated the typology using an empirical taxonomy approach. Robinson and Pearce (1988) replicated Dess and Davis's study in a different industrial setting. Thus the core constructs of Porter's generic strategies seem robust. Galbraith et al. (1983) have proposed refinements to Porter's typology by examining contingencies such as industry maturity, buyers' price sensitivity (Wright, 1987), manufacturing structure (Kotha and Orne, 1989), and information asymmetries (Nayyar and Templeton, 1991) on the choice of generic strategies.

Sand Cone Capability

However, Hill (1988) and Wright (1987) questioned the supposition that in Porter's model generic strategies are mutually exclusive, and argued that generic strategies are only the underlying dimensions of firms' competitive strategies. Chrisman et al. (1988) argued that generic strategies are ***not mutually exhaustive***, and thus are unable to describe the strategies adequately.

Therefore, Ferdows and De Mayer (1990) tried to explain this question through their "Sand Cone Model," which shows how strategic capabilities can represent a *cumulative* relationship instead of *trade offs*. They also insisted that "to build cumulative and lasting manufacturing capability, management attention and resource should go first toward enhancing quality, then - while the efforts to enhance quality are further expanded - attention should paid to improve also the dependability of the production system, then- and again with while effort on the previous two are further enhanced- production flexibility should also be improved, and finally, while all these efforts are further enlarge, direct attention can be paid to cost efficiency." (p. 168)

Gonsalves et al. (1999) examined Porter's three generic strategies for Web sites. Managers' greatest expectation from their web sites was that they would help in marketing to specialized customer segments (**Focus strategy**). Their second expectation was that the site would help differentiate their products and services from those of their competitors (**Differentiation strategy**). Their least important expectation was to use the Web for cost leadership (**Cost efficiency strategy**). Managers sought cost leadership considerably less than focus and differentiation. They suggest that when managers expected the Website to help customers acquire their products, they thought it would help their organizations carry out **all three** generic strategies. Consequently, the Website was expected to reduce organizations' costs and to serve as a very powerful competitive tool.

Durand and Coeurderoy (2001) clarified that a firm's performance depends on the firm's order of entry in the market, and strategic orientations (cost-leadership and differentiation), and a firm's age partially drives one's financial and organizational performance.

Hypotheses Development

On the basis of previous studies of strategic topology and strategic capability, we assume that Porter's strategic topology will be comprehensive through a *cumulative* relationship instead of a *trade off*s relationship in the strategic capability.

This idea will solve our question "Why do early movers such as eBay.com and amazon.com, survive, while later entrants [followers] fail in the volatile e-business market place?"

According AMR research (Shepherd, 2000), the early mover advantages in converting to e-business include: improved stock market valuation, a lock on the best relationships, ability to influence the industry, increased market share, a lead in e-business knowledge and experience, and the retention of key employees.

Focus

The niche strategy focuses on penetration into a small but specialized market where other competitors cannot easily enter. In other words, it concentrates intensively on a subdivided sector of a market or a certain customer group. Since niche markets exist as small sectors, unlike other firms which deal with general markets, thus focusing on cost strategy or differentiation strategy; a niche market player needs to have a global perspective by responding to its customer's needs.

According to Porter (1985), The benefits of optimizing the firm's strategy for a particular target segment (focus) cannot be gained if a firm is simultaneously serving a broad range of segments (cost leadership or differentiation). Google.com focuses on the depth of their business in search engines, and Barnes and Noble has concentrated their business in book selling and tried to provide more convenient services to their customer, while early movers such as the Yahoo.com-portal site, and amazon.com- ebook store have extended their service with transaction handling on the basis of B-to-C transactions (Timmers, 1999). Hence hypothesis 1:

Hypothesis 1: *Followers more strongly implement a focus strategy than early movers*.

Differentiation

Kotler (1991) defined differentiation as "the subdividing of a market into homogeneous subsets of customers, where any subset may conceivably be selected as a market target to be reached with a distinct marketing mix."

In a differentiation strategy, a firm seeks to be unique in its industry along some dimensions that are widely valued by buyers (Porter, 1980). Differentiation involves providing a product or service with a unique characteristic, which allows the company to charge a relatively higher price and thus generate better margins (Timmers, 1999). It is rewarded for its uniqueness with a premium price.

In this paper, we adopt Miller's variant of differentiation (Miller 1986, 1988). Miller posited two types of differentiation to make up for the restricted vision of innovation behaviors suggested by Porter's framework: innovative differentiation and marketing differentiation. Marketing differentiation is based on marketing expenditures and is similar to Miles and Snow's (1978) analyzers.

Innovative differentiation is based on innovation and is akin to Miles and Snow's prospectors. IT-based firms could help enhance customer service by increasing convenience, collecting service performance information for management use, and providing extra services (Furey, 1991). IT services provide several competitive roles, including creation of barriers to entry, productivity enhancement, and revenue generation (Fitzsimmons and Fitzsimmons, 1997). However in the current business environment, the deployment of IT will likely continue to put pressure on the profitability of businesses in many industries. Many established companies are now more familiar with Internet technology and are rapidly deploying On-line applications (Porter, 2001).

Businesses utilizing a combination of On-line and off-line make fiercer competition. However, new developing ITs provide early movers with new ways of providing customer service, lower transaction costs, easier access to price and product information, a convenient means to purchase associated services, lower selling costs, and a wider market (Porter, 2001).

Initially, the market differentiation strategy separates customers into two groups: e-commerce and brick-and-mortar customers. It can help to show that the e-commerce market does not erode their traditional market, and then solve channel conflict problems. Xerox Corp. employs a market segmentation strategy by separating its copy machines based on the correspondent markets, such as the SOHO/retail and Industry markets. They sell the copy machines for retail or SOHO only by itself, but other machines are sold at both Xerox and regional retailers. According to Shepherd, the early few movers in each market that support e-business processes will have an opportunity to build market share at their competitor's expense. The most important factor will be the early movers' ability to attract new customers who are looking for suppliers supporting processes, while using the processes to retain their own customers. Kerin et al. (1992) also proposed that all else being equal, an early mover's differentiation advantages are greater than a follower's. Hence hypothesis 2:

Hypothesis 2-1: *Early movers more strongly implement market differentiation than followers*

Hypothesis 2-2: *Early movers more strongly implement innovation differentiation than followers*

Cost Leadership

If a product is not perceived as comparable or acceptable by buyers, a cost leader will be forced to discount prices well below the competitors to gain sales (Porter, 1980). Cost leadership involves pursuing a position of being the lowest-cost producer through economies of scale and benefiting from experience curve effects in order to build and increase market share (Timmers, 1999). Most of large-size firms in an industry with greater access to resources may primarily compete with cost leadership or differentiation strategies, and smaller firms can only viably compete by using the focus strategy (Wright, 1987).

Early movers in electronic business expect that deployment of an e-business would enhance brand loyalty and create a strong eye-ball effect, and ultimately provide sustainable profitability. The application of the Internet works toward achieving a sustainable competitive advantage by operating at a lower cost, by commanding a premium price, or by doing both (Porter, 2001).

Many e-retailers have no choice but to adopt price competition in order to get customers these days. Therefore, they can stay with a cost strategy to survive (Hoffman & Novak, 1999). Amazon's business services mostly seem to emphasize low cost and easy financial benefits, most likely because of high traffic for its business customers. According to Kerin et al. (1992), if early movers have superior information, they can acquire plant and equipment and/or contracts with suppliers of factor inputs for material at prices below those that will prevail later in the evolution of the market. Through such preemptive actions, the early mover may achieve an absolute cost advantage over followers (Lieberman and Montgomery, 1988). Hence our hypothesis 3 will be:

Hypotheses 3: *Early movers more strongly implement cost efficiency than followers*

Research Method and Analyses

The industry examined in this study comprised on-line firms and hybrid [on-offline] firms in Korea. The questionnaire measured the Porter's dimensions of the strategy as perceived by the managers. Questions were derived from Porter's generic strategies literature (Galbraith and Schendel, 1983; Durand and Coeurderoy, 2001; Spanos and Lioukas, 2001).

The questionnaire was originally designed in English and then translated into Korean. To avoid cultural bias and ensure validity, the Korean version was finally back-translated into English to detect any significant misunderstanding[s] due to translations. The pilot test was conducted on the founders of 13 internet ventures in Korea to improve the clarity and relevance of the questionnaire.

This survey utilizes a 5-point Likert type scale. To develop constructs and investigate the hypotheses, this study uses a factor analysis and a one-way ANOVA. The survey was distributed to 2,000 online and hybrid [on and off line] companies at the beginning of 2002. This study tests the aforementioned hypotheses with 103 samples. The return rate was 5.15 percent. The demographic characteristics of the sample are as follows: Managers of most levels participated in the study: CEOs (10.7%), top managers (14.6%), middle managers (16.5%), and lower managers (58.3%). Regarding careers, the participants were variously employed: e-shopping (37.9%), financing services (7.8%), e-procurement (1.9%), pharmacy (1.0%), information brokerage (12.6%), virtual Business community (7.8%), third party market place (10.7%), value chain service (4.5%), and others (15.57%).

In order to examine the hypotheses, we grouped the sample into two groups; an early mover group and a follower group. We defined early movers (42.4%) as being first or second entrants in their own e-business market place, and followers (57.6%) as being third or after entrants.

Table 1. Factors Analysis of Independent Variables

Variables	Focus	Market Differentiation	Innovation Differentiation	Cost Efficiency
Focus on price in the niche market	.859	.169	.088	.089
Focus on process innovation in the niche market	.848	.198	.071	.024
Focus on cost reduction in the niche market	.778	.082	-.026	.060
Focus on refining existing products/services in the niche market	.748	.159	.015	.088
Differentiation of quality from competitors	.167	**.818**	.169	.009
Differentiation of design from competitors	.059	**.788**	.225	-.064
Differentiation of service Quality from competitors	.289	**.784**	.153	.172
Differentiation of breadth of products/services	.179	**.729**	.123	.166
Difficulty of imitation of products/services from competitors	.006	.209	**.886**	.057
Difficulty of imitation of process from competitors	.045	.218	**.886**	.100
Difficulty of imitation of technology from competitors	.064	.151	**.845**	.105
Positioning of prices from competitors	.069	.084	.058	**.910**
Positioning of production/service cost from competitors	.128	.081	.163	**.885**
Eigenvalue	4.581	2.270	1.541	1.231
Percentage of Variance Explained	35.230	17.462	11.858	9.469

Secondly, we performed a factor analysis using measures related to strategic topology constructs to assess the reliability of the multi-item scales. Table 1 shows the factor analysis results. Factor analysis is commonly used to reduce a set of variables to underlying factors in general linear combinations of original variables, creating a clear structure, and suggesting clear discriminant validity for these constructs. These four factors account for more than 74.019% of the observed variance. The loading of each of the 13 measures on its respective factor is well over 0.70, and the eigenvalues of each construct are above 1. The results of the factor analysis indicate that the measures chosen are true constructs, because there are relatively high correlations between measures of the same construct using different methods and low correlations between measures of construct that are expected to differ (Cronbach, 1971; Campbell and Fiske, 1959).

After testing the internal validity of each multi-item scale, we summed the questionnaires' value of each construct. Finally, we conducted a one-way ANOVA to detect a difference in end-users perception between the two groups.

In general, the survey results demonstrate that early movers are positively related to market differentiation, innovation differentiation, and cost efficiency. However, focus is not different between early movers and followers even though we hypothesized that followers would implement a focus strategy more than early movers (see Table 2).

Discussion

Results of the ANOVA indicate that early movers implement market differentiation, innovation differentiation, and cost efficiency more than followers; even though the focus strategy is not statistically significant, early movers are higher than followers (see Table 2 and Table 3).

Table 2. Results of a One-Way ANOVA between Early Mover and Followers

Constructs		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Focus	Between Groups	.237	1	.237	.024	.878
	Within Groups	969.117	97	9.991		
	Total	969.354	98			
Market Differentiation	Between Groups	24.669	1	24.669	3.999	.048
	Within Groups	598.321	97	6.168		
	Total	622.990	98			
Innovation Differentiation	Between Groups	21.303	1	21.303	3.691	.058
	Within Groups	559.868	97	5.772		
	Total	581.172	98			
Cost Efficiency	Between Groups	8.786	1	8.786	3.284	.073
	Within Groups	259.538	97	2.676		
	Total	268.323	98			

How can we explain these results? Are strategic capabilities still a *trade off* relationship? The results indicate that strategic capability is not a trade off relationship in e-business. As Ferdows and De Mayer (1990) suggested, the sand cone model can better explain early mover strategic capabilities as shown as Figure 1. They defined the Sand in the sand cone model as a stand-in for management effort and resources. To obtain a sand cone, a market entrant regardless of whether they are an early move mover or a follower, first create a stable foundation of focus in a niche market. Pouring more sand, the entrants enlarge the focus foundation while also starting to tackle the differentiation and difficulty strategies against their competitors. To build a taller sand cone, by enhancing the foundation layers of focus and differentiation, entrants can begin building a stable and well-founded cost strategy.

Table 3. Results of Hypotheses

Hypotheses	***Condition* (mean/total)**	***Statistical Supported?***
Hypothesis 1. Focus	EG (14.9762/20) FG (14.8772/20)	No
Hypothesis 2-1. Market Differentiation	EG (15.5714/20) FG (14.5614/20)	Yes
Hypothesis 3. Cost Efficiency	EG (6.6905/10) FG (6.0877/10)	Yes

As previously mentioned, the strategic orientations (cost-leadership and differentiation) on its performance are affected by a firm's order of entry in the market (Durand and Coeurderoy, 2001). Does the early mover always survive in e-business market? The answer is No, because later entrants in volatile online markets also have advantages such as low imitation costs, the free ride effect, economies of scope, and learning from the early movers.

Conclusion

While nearly all companies can benefit from e-business processes and techniques, the early movers toward online markets will reap the greatest rewards. Too many traditional companies take a cautious phased approach to e-business. They initiate studies, analyze requirements, build ROI models, and approve pilot programs when they need to act to develop their online markets.

We suggest that since online companies have long understood the early mover advantages, now more brick'n mortar companies need to learn to apply the same principles. Nearly everything about e-business is poorly understood, unreliable, and likely to change. The technology, business models, industry standards, and knowledge base are all in their infancy. Virtual and e-business investment should be viewed as tactical, as it will probably have to be changed or replaced in a matter of months. But despite this fluid environment, companies must commit themselves now. Businesses that delay in the conversion to e-business will be at a significant, and perhaps fatal, disadvantage in the long term.

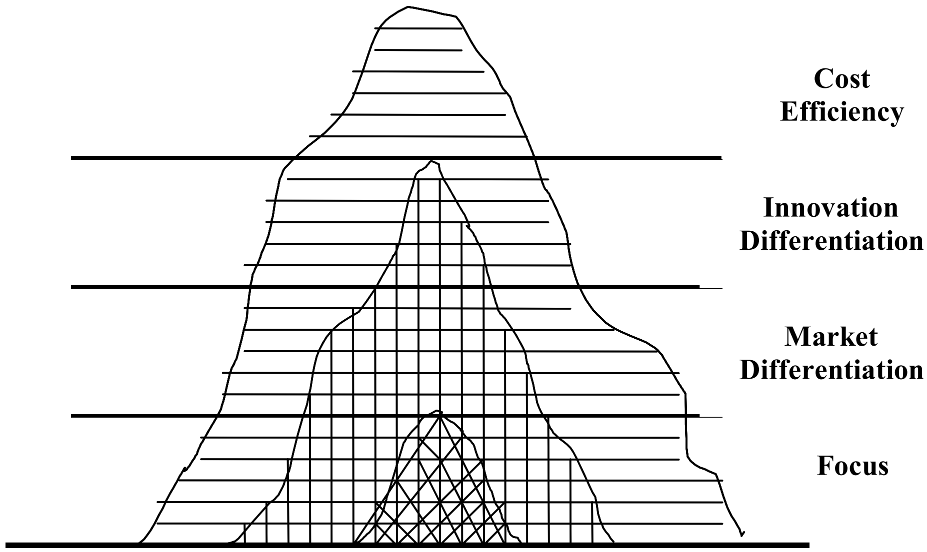

Figure 1. Development of Capabilities Based on the Sand Cone Model

Finally, to build cumulative and lasting strategic capabilities in e-business, management attention and resources should go first toward enhancing focus, and then while the efforts to enhance focus are further expanded - attention should be paid to improve also differentiation, then - and again while efforts on the previous two are further enhanced- direct attention can be paid to cost efficiency.

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