
TESTING THE APPLICABILITY OF PORTER'S GENERIC STRATEGIES IN THE DIGITAL AGE: A STUDY OF KOREAN CYBER MALLS

Eonsoo Kim
Korea University
Seoul, Korea

Dae-il Nam
LG Economic Research Institute
Seoul, Korea

J. L. Stimpert
Colorado College
Colorado Springs, CO

Abstract

Although traditional strategic management theory evolved in the context of brick and mortar firms operating in a physical space, we propose that Porter's (1980) generic strategy framework is still applicable, albeit in need of some modification, to competition in the digital age. This study tests that assertion in a sample of Korean online shopping malls. In particular, it explores the following research question: Do Porter's (1980) generic strategies explain performance differences across business-to-consumer (B2C) firms?

Our results suggest that Porter's generic strategies are applicable to e-business and that they indeed explain performance differences across firms. Contrary to conventional wisdom, but consistent with the logic of business in the digital realm, the cost leadership strategy exhibited the lowest performance. Firms pursuing a hybrid cost leadership/differentiation strategy exhibited the highest performance. Interestingly, when a sub-sample of all firms pursuing the hybrid strategy was analyzed for performance differences by firm type (pure plays vs. clicks-and-bricks), pure plays exhibited superior performance. Our findings suggest that cost leadership and differentiation can be combined at the same time, and must be combined to be successful in e-business.

The inexorable worldwide spread of the Internet and unprecedented rates of adoption of computer and telecommunication technologies by firms in North America, Western Europe, and selected parts of Asia continue to erode the relevance of traditional strategic weapons such as geographic location and favorable physical resources. The Internet now allows firms located anywhere in the

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world to project their influence in distant markets without creating a physical presence. Likewise, computer and telecommunication technologies are making the possession of heretofore advantageous physical resources increasingly irrelevant.

How is the new information age different from the machine age of the last 100 years? Managers and scholars alike are struggling to understand how economic and business rules have changed and should change. Many have claimed that the old concepts will not be applicable in this new environment. As scholars, we ask whether existing strategy frameworks, models, and tools are applicable in this new age.

Traditionally, one of the main streams of strategy research examines the relationship between strategy type and firm performance (Carter et al, 1994; Dess & Davis, 1984; Kim & Lim, 1988; McDougall & Robinson, 1990; Miller, 1987; Porter, 1980). These strategy types, sometimes called generic strategies (Porter, 1980), archetypes, or gestalts (Robinson & Pearce, 1988), simplify a myriad of possible strategies into a limited set of strategy types. We do not know, however, whether these strategy types can be applied to e-businesses (Smith et al, 1999). This paper asks whether we can use conventional generic strategy concepts to understand, explain, and predict firms' strategic behaviors and performance outcomes in the Internet age. While enthusiasm for e-business, especially B2C business, has waned since the Internet boom period of the late 1990s, business activity on the Internet continues to grow.

Although current management theories evolved in the context of brick and mortar firms, we propose that Porter's (1980) generic strategy framework is still applicable, albeit in need of some modification, to competition in the digital age. This study tests that assertion using data from a sample of Korean online shopping malls. In particular, the study explores the following research questions:

1. What strategy types are found among e-business firms? Will they resemble Porter's (1980) generic strategy types?
2. Will we find performance differences among Internet business firms using different strategy types?
3. Will we find differences in the strategy-performance relationships of pure online firms (pure plays) and firms with both online and off-line operations (clicks and bricks)?

Generic Strategies and E-Business

Academicians have long been interested in the concept of strategy types (Fahey & Christensen, 1986). Previous research on strategy types includes studies offering new typologies based on empirical analyses (Abell, 1980; Miles & Snow, 1978; Mintzberg, 1988; Porter, 1980), replication studies (Kotha & Vadlamani, 1995; Miller & Dess, 1993; Miller & Friesen, 1986), and studies adding new variables (Hambrick, 1983; Kim & Lim, 1988; Miller, 1988). The

most widely used strategy types are those developed by Miles and Snow and Porter (Douglas & Rhee, 1989).

We focus on Porter's framework of generic strategies for the following reasons. First, Porter's framework of generic strategies is inherently tied to firm performance. Second, Porter's framework overlaps with other typologies. For example, Miles & Snow's (1978) prospector is similar to Porter's strategy of differentiation, and Miles & Snow's defender and Hambrick's (1983) and Dess & Davis' (1984) cost leadership strategies are similar to Porter's strategy of cost leadership. Miller & Friesen's (1986) niche innovator is similar to Porter's strategy of focus. Finally, Porter's framework has received more research attention than any other concepts (Kim & Lim, 1988). In the sections below, we discuss the characteristics and extend the applicability of Porter's generic strategies in e-business environment.

Cost Leadership Strategy

Cost leadership is believed to be a viable strategic choice in Internet commerce as in off-line businesses. Lower price has been a key selling point of e-business firms like expedia.com and CDnow in America and Yes24 (an Internet bookseller) in Korea. The cost leadership strategy may be particularly appealing to online buyers who are price sensitive. In one study conducted in Korea, 71 percent of 500 first-time online shoppers indicated that price was their most important consideration (Kim & Kim, 2000).

The Internet eliminates many traditional time and spatial barriers. Early movers' strategies are easily imitated and entry barriers are much lower than in conventional businesses. As a result, lower costs can be an effective defensive measure against competitors, since firms can be profitable even in the face of fierce competition if their costs are low enough. And, the low prices offered by market leaders (based on their lower costs) can serve as an effective entry barrier against new entrants. The Internet also allows firms to adjust their prices quickly so that Internet firms can enjoy a higher level of pricing flexibility and more efficient price competition (Bakos, 1998).

The Internet also helps consumers overcome bounded rationality in terms of price scanning. The long held Cyert and March's (1963) satisficing argument may be less applicable in an Internet environment since the speed and expansiveness of information search made possible by the Internet enable consumers to quickly gather a wealth of data on price comparisons. Price comparison sites drastically reduce search costs, so consumers may approach near-optimal price comparison (Bakos, 1997).

Another characteristic of e-businesses is the law of increasing returns (Arthur, 1996). For a firm to enjoy increasing returns, it must secure a critical mass of consumers as soon as possible. Competitive pricing often offers the quickest and easiest way for a firm to secure the largest number of consumers.

Differentiation Strategy

A successful differentiation strategy can be built on many factors, including design, brand image, reputation, technology, product features, networks, and differentiated customer service, and true differentiation should be hard for competitors to imitate. Many of these differentiating elements are applicable to an Internet business. Chang (1997) found that customers of Internet bookstores in Korea saw brand as more important than price as their buying criteria. He also reported that more people used these Web sites to search for information and to find certain books than to compare prices. Lynch and Ariely (2000) found that price might be ignored as long as the product-customer fit is enhanced. They also found that buyers became less sensitive to price when they were given more information about how a particular product might meet their needs.

A key aspect of Internet marketing is not just offering differentiated products and services, but also differentiating the channel (Kim & Lim, 1988; Miller, 1991). According to one recent study by Netsmart America, brand is becoming more and more important, with 65 percent of the respondents to the firm's survey indicating that brand is the most important determinant of Website visits (www.i-biznet.com, 8/3/2000). The survey also found that price was an important factor in purchasing decisions for relatively low price items such as books, entertainment, and toys, whereas brand was a more important consideration when purchasing computers, automobiles, furniture, banking, and security investments.

Lower switching costs on the Internet also encourage differentiation. In traditional businesses, consumers often tolerate mediocre products and services due to high switching costs. In the e-business environment, however, consumers can get access to information previously impossible to obtain or to compare. As a result, consumers can more easily switch to firms that offer additional value through differentiated features (Kim, 2000).

In the e-business environment, in addition to the traditional factors such as brand image, product features, and customer service, speed of delivery, convenience, and the security of transactions are important elements of any differentiation strategy. Although popular sites like Amazon.com do not always offer the lowest prices, people are attracted to these sites because of their brand reputation and credibility (Smith et al, 1999). This suggests that many e-business consumers are more concerned about security or delivery than price.

Focus Strategy

Firms pursuing a focus strategy target specific groups of buyers or product lines. Within their more limited competitive scope, they emphasize either low costs or differentiated products and services. Many Internet companies are new entrants. These new entrants may choose to compete against large, established firms by focusing on a particular niche. Concentrated management of a niche market should not only increase their chances of success, but should also serve as an entry barrier. In addition, the lower levels of investment required by many online businesses means that they enjoy lower break-even points. Thus, tar-

getting even small market segments can be viable, and consumers may be easily connected with producers that focus on niche markets due to the Internet's search advantages.

Furthermore, the Internet allows firms to customize their offerings to meet the specific wants and needs of their customers (Bakos, 1998). Customers are identified every time they visit a Website, and a great deal of information about each customer can be accumulated over time. Based on this information, firms can offer customized products or services for a particular customer.

Propositions

Types of Strategies and Their Performance Implications

We do not know with certainty whether the new e-business environment represents a totally different, discontinuous change from the old business environment or whether the old and new environments will share many features and competitive imperatives. Therefore, we have made several assumptions about the application of conventional generic strategies in the e-business environment.

One critical assumption underlying this study is that electronic technologies create a platform to support existing business practices and at this point have not advanced to the point of precipitating a paradigm shift. Although the Internet provides an efficient means to order products, it is not entirely a new way of doing business. For example, the catalog retailers with toll-free numbers and automated fulfillment centers have been around for decades. The Internet only changes the front end of the process (Porter, 2001). Liu & Arnett (2000) argue that, just as in off-line commerce, e-business firms should attract customers in the *pre-sales* phase, make purchasing happen in the *on-line sales* phase, and provide customer service and problem resolution in the *after-sales* phase. Finally, one of the most obvious advantages of e-business seems to be lower cost due to the absence of physical locations. However, Schlauch & Laposa (2001) found that pure on-line firms were not realizing real estate-related cost savings over their retailing competitors (brick and mortars and clicks and bricks).

As a result, we assume that firms still view customers in terms of shared characteristics (i.e., market segmentation is possible), that different sets of customers have different needs and desires (i.e., opportunities for product differentiation exist), and that products and services exhibit different demand elasticities (i.e., firms may compete on price). And, as suggested in the previous section, we assume that each of Porter's generic strategies can be applied to explain the behavior of Internet business firms. Hence, we offer the following proposition:

Proposition 1: E-business firms will pursue a set of generic strategies similar to Porter's generic strategies of cost leadership, differentiation, and focus.

Cost leadership is widely practiced today among firms that sell standardized products and services such as CDs (Cdnw.com) and books (Barnesandnoble.com). The benefit of cost leadership, typically manifested as price competitiveness, is a common competitive dimension among Internet firms. And, among first-time online shoppers, price may well be the most important factor influencing their buying decisions (Kim & Kim, 2000). This may be partially attributable to ease of scanning and comparing prices on the Internet (Bakos, 1998), however, easy price comparisons and very low customer switching costs suggest that firms pursuing a strategy of cost leadership could easily become locked in a vicious cycle of price-cutting.

Therefore, differentiation based on either customizable products, a customized online experience, or both may be a more viable strategic weapon. Firms that reduce customer search costs, engender trust, and offer products, services, and online experiences tailored to their users' needs are likely to elicit initial and repeat purchases. Amazon.com, for example, uses collaborative filtering software to offer its users customized page views based on past searching habits. The software also permits Amazon to engage in anticipatory marketing by suggesting titles that may appeal to customers.

Traditionally, cost leadership and differentiation or their equivalents were regarded as equally effective strategies (Miles & Snow, 1978; Porter, 1980). We suggest otherwise. For obvious reasons, price competition will almost certainly intensify in the Internet business environment, and firms with commodity-like products will face great pressure to keep their prices as low as possible. Therefore, the logical strategy choice for firms wanting to survive on the Internet would be differentiation.

Since focus strategies are only different from cost leadership and differentiation in terms of the scope of competition, they have been regarded as just as viable as the other strategies depending on the circumstances. In e-business, however, focus strategies may be more attractive than cost leadership strategies. As discussed above, the potentially low cost base and thus, low break-even point, coupled with the relatively smaller size of many e-business entrants, may give firms employing a focus strategy a better chance of success. On the other hand, it is difficult to argue that a focus strategy will be superior to differentiation. Hence, we offer the following proposition:

Proposition 2: In e-business, the generic strategy of differentiation will be associated with higher performance than the generic strategies of cost leadership and focus.

Hybrid or Stuck-in-the-Middle Strategies

Porter (1980) argued that cost leadership and differentiation are such fundamentally contradictory strategies, requiring such different sets of resources, that any firm attempting to combine them would wind up "stuck-in-the-middle" and fail to enjoy superior performance. And, from a traditional business perspective,

cost leadership and differentiation do seem incompatible. Cost leadership requires standardized products with few unique or distinctive features or services so that manufacturing and production costs are kept to a minimum. On the other hand, differentiation usually depends on offering customers unique benefits and features, which almost always increase manufacturing and marketing costs.

Subsequent studies have both supported and called into question many of Porter's claims. For example, Hambrick (1983), using PIMS data, was able to identify firms pursuing cost leadership, differentiation, and focus strategies in two different capital goods industries. Miller and Friesen (1986) and Miller (1988) also confirmed the existence of Porter's generic strategies. Dess and Davis (1984) found that firms employing only one of Porter's generic strategies outperformed firms pursuing elements of more than one strategy. Robinson and Pearce (1988), in their study of 97 manufacturing firms, found that stuck-in-the-middle firms showed lower levels of performance. Kim and Lim (1988) also found firms pursuing Porter's generic strategies in a sample of 54 high-growth electronic firms in Korea, and they concluded that firms pursuing one of the generic strategies outperformed firms pursuing more than one of the strategies.

Many more recent articles and studies have, however, challenged Porter's typology and questioned his claims about the exclusivity of the generic strategies. For example, Hill (1988) challenged Porter's claim about the exclusivity of cost leadership and differentiation, and argued that sustainable competitive advantage rests on the successful combination of these two strategies. Murray (1988) critiqued Porter's typology, and noted that the development of any successful business strategy must reflect the larger competitive environment. And, since industry environments do not specifically prescribe the need for cost leadership or differentiation, Murray found little reason to conclude that only one strategy should be employed in response to any particular environment. Similarly, a study by Wright et al (1990) found that multiple strategies are needed to respond effectively to any business environment. Miller and Dess (1993) could not confirm the proposition that a combination strategy would be associated with lower performance.

Furthermore, it seems that turbulent environments (Kim & McIntosh, 1999) and global environments (Chan & Wong, 1999) require flexible combinations of strategies. In a study by Booth and Philip (1998), only two out of sixteen successful sample firms employed a unitary generic strategy. The remaining firms in their sample employed flexible, multi-dimensional strategies combining elements of cost leadership and differentiation in order to meet the needs of customers. Karnani (1984) proved that a combination strategy was feasible using game theory. And, more than a decade ago, Glazer (1991) predicted that firms would not need to choose between strategies of low cost and differentiation.

Any incompatibility between cost leadership and differentiation may have held true in the mid- to late 1980s when business environments were relatively stable. Rapidly changing competitive environments call for more flexibility as well as the ability to mix more than one generic strategy. Mass customization and the development of network organization concepts both demand and make

possible the flexible combination of multiple generic strategies (Anderson, 1997; Goldman et al, 1995; Pine, 1993; Preiss et al, 1996). And, Evans and Wurster (1999) concluded that the Internet disassembles traditional value chains, introducing new competitive imperatives and requiring new strategies. Another major change is the disappearance of trade-offs between information richness and information reach. The Internet's universality and its ability to reduce information asymmetries and transactions costs will also create opportunities to "rewrite the rules" on business strategy (Afuha & Tucci, 2001). Therefore, we believe that a combination of generic strategies in e-business competitive environments is not only possible but may be required. Thus, we offer the following proposition:

Proposition 3: Hybrid strategies combining more than one generic strategy will be associated with higher performance relative to the strategies of differentiation or cost leadership.

Pure Plays vs. Clicks and Bricks

Two broad types of Internet businesses exist. One is the pure online firm (pure plays), and the other includes firms with both online and off-line businesses (clicks and bricks). During the earlier stages of e-business, many observers believed pure plays would be in a stronger competitive position. This thinking argued that pure plays would be more flexible and better able to leverage their first mover advantages. They would not be hindered by conflict between online and traditional marketing channels. They would also enjoy greater flexibility in pricing. A good example is provided by a pure online firm like Netscape, which was able to seize a dominant share of the browser market by ignoring conventional "rules" (Yoffie & Cusumano, 1999).

Recent history has proven otherwise. The traditional off-line firms, which joined the Internet as second movers, did struggle at first. By the end of 1998, however, many of them were becoming market leaders. In a market survey done by Mediamatrix, clicks and bricks firms such as Barnes & Noble, Toys 'R' Us, and KBKids were included among America's top ten Internet shopping sites (www.i-biznet.com). Also, according to Nielsen/Netratings, eleven of the fifteen most frequently visited Websites at the end of 2000 were firms with both online and off-line operations such as Toys 'R' Us and Barnes & Noble (Lee, 2001).

Since clicks and bricks firms are already familiar to customers and have credible brands, other things being equal, customers should prefer clicks and bricks Internet sites to those of pure plays. Furthermore, clicks and bricks can offer product returns and other customer services through their physical storefronts (Griffith, 1999). Zettlemeier (1996) showed that clicks and bricks firms could enjoy higher performance by properly combining their online and off-line businesses, whereas the ability of pure plays to provide information would be limited to their online channel. Brynjolfsson and Smith (2000) concluded that the brand recognition, reputation, and credibility of clicks and bricks firms are important advantages that pure plays often lack. Modahl (2000) argued that e-business will

be dominated by clicks and bricks, particularly by established firms that expand online by leveraging their off-line assets such as distribution channels, brand reputation, and credibility. Also, many pure plays are realizing the advantages of adding off-line elements to their online business:

It turns out that online retailing is not so different from traditional retailing, and it takes more than a glitzy Web site to be successful... Smart e-tailers realize that the only way to ensure quality customer service is to build and stock warehouses, pack the boxes, and have sufficient staff to handle customer calls and returns. E-tailers that rely on manufacturers and distributors to handle inventory and order fulfillment encounter product shortages and late deliveries... Amazon's recent shift in strategy is another good example of just how important warehousing is to e-business. Amazon is building several enormous warehouses that send out merchandise in bulk to retail stores. Amazon's warehouses and distribution network are designed specifically for online retailing and will allow merchandise to be sent out item by item to individual customers. Several other Internet retailers are also building warehouses and distribution systems (Glover et al, 2001:36-37).

Thus, at this stage, it appears that click and brick firms enjoy a number of advantages over pure plays. Hence, we offer a final proposition:

Proposition 4: The relationship between strategy and performance will be moderated by type of firm, with click and brick firms enjoying performance advantages over their pure play counterparts.

Methods

A questionnaire, drawing on previous studies of the relationship between generic strategies and firm performance, was developed. The questionnaire included questions about strategy and asked respondents for their subjective evaluations of performance.

Strategic Variables

Seventeen of 20 strategy questions were derived from studies of brick and mortar businesses (Carter et al, 1994; Dess & Davis, 1984; Kim & Lim, 1988; Kim & Mc Intosh, 1999; McDougall & Robinson, 1990; Miller, 1986). The remaining questions — about security, convenience of transaction, and speed of delivery — were derived from Smith et al's (1999) study of digital businesses (Table 1).

Table 1
List of Strategic Variables

Competitive Method	Literature Review ^{a)}					Scale
	①	②	③	④	⑤	
1. Broad product range	•	•	•	•	•	5-point Likert scale
2. New product development	•		•	•	•	
3. Extensive customer service capabilities		•	•	•	•	
4. Expenditure on R&D		•		•	•	
5. Response to market					•	
6. Early catch on customer needs	•				•	
7. Breadth of customer type		•		•		
8. Continuing concern for lowest S&A expenses	•	•		•		
9. Emphasis on niche market	•		•	•		
10. Image building of firm and product	•	•	•	•	•	
11. Emphasis on intangible asset including patent				•		
12. Average age of major products		•				
13. Serving special geographic markets		•		•		
14. Emphasis on specialized market	•		•			
15. Economy of Scale			•			
19. Efficient procurement	•	•	•	•		
20. Lower Price	•	•	•	•	•	
16. Online Security						
17. Easy to Pay						
18. Delivery Speed						

^{a)} ① Dess & Davis, ② Miller, ③ Kim & Lim, ④ McDougall & Robinson, ⑤ Carter et al

Performance Variables

Unfortunately, Korean Internet firms, like their American counterparts, provided objective financial performance data that were not highly reliable for assessing performance. At the time of the study, not so many profitable Internet businesses existed, and due to the high level of early investments in development and marketing, any successful Internet businesses were marginally profitable. And, in the case of clicks and bricks companies, it is often difficult to separate their online and off-line operations. Although more reliable financial measures become available as e-business enters a more mature stage (*Business Week*, 5/12/2003), we decided not to collect objective measures for this study.

Lacking credible objective data, subjective measures that rely on respondents' perceptions become a viable alternative (Brush & Vanderwerf, 1992; Murphy et al, 1996; Robinson & Pearce, 1988). Five subjective performance measures were adopted from the study by Robinson and Pearce (1988) — revenue, rate of growth, growth potential, profitability, and overall firm performance. We asked respondents to indicate their perceptions of their firms' performance on these five dimensions using 5-point Likert scales.

In addition to these self-report, subjective measures of performance, the study also used an objective measure of performance as suggested by Murphy et al (1996). For this study, we used data on average site traffic and visits that were obtained from Rankserv (www.rankserv.com). Rankserv estimates the larger population's use of Internet sites based on a sophisticated analysis of more than 40,000 computer users whose activities are monitored through the installation of a special program called nTaker.

Sample

The questionnaire was pilot-tested using a small random sample of B2C on-line malls listed in the Cyber Shopping Mall Directory published by the Korean Chamber of Commerce. After refinements were made and the survey instrument was finalized, it was emailed to the CEOs of 1,009 firms included in either the Cyber Shopping Mall Directory or Yahoo's Korean site (www.yahoo.co.kr). In total, 77 questionnaires were returned, two of which were unusable, so the final sample included responses from 75 firms. Although the study's response rate was low by traditional research standards, in light of the 15-second time limit beyond which online users become bored and lose interest, our response rate can be considered exceptionally high (Williams & Richard, 2000). And, a sample of 75 firms is not so small considering the samples used in previous studies of generic strategy. For example, Kim and Lim (1988) analyzed 54 firms, Miller (1991) 52 firms, Covin et al (1990) 57 firms, and Sandberg & Hofer (1987) just 17 firms.

Since this study is about business strategy and firm performance, we asked that the questionnaire be answered by a person who was knowledgeable of the firm's strategic direction, and we were gratified that 75 percent of the surveys were answered by senior level (or higher) executives. More than 50 percent of the sample firms were less than two years old. Those firms over four years old — 24 firms — were all clicks and bricks firms. And, more than 80 percent of the sample firms had fewer than 300 employees.

Results

Reliability of the Survey Instrument

The Cronbach α of nearly every variable was higher than .7, which suggests a high degree of reliability. The only variable with a Cronbach α less than .7 — breadth of customer type — was excluded from further analyses. Correlations among the five subjective performance measures were all significant ($p < .05$), reflecting a great deal of internal consistency among the performance variables (Table 2).

Table 2
Corelations among Performance Variables

	Revenue	Growth Rate	Growth Potential	Profit	Overall Firm Performance
Sales	1				
Growth Rate	.803***	1			
Growth Potential	.370***	.515***	1		
Profit	.622***	.585***	.457***	1	
Overall Firm Performance	.806***	.754***	.581***	.455***	1

***p > 0.01

Identifying Strategy Types

With little prior research on strategy types among e-businesses, we employed a two-step approach to derive strategic dimensions and strategy types (Carter et al, 1994; Kim & Lim, 1988; McDougall & Robinson, 1990). Factor analysis was used to identify strategic dimensions based on the strategy variables. Principal components analysis employing a Varimax rotation produced five strategic dimensions (Table 3).

Factor 1 is labeled "Market Leadership." This is a very broad strategic dimension that includes staying sensitive to market changes, promptly reflecting customer needs in products, and offering a high level of customer service. Also included are a high level of investments in new product development and R&D, and charging competitive prices while maintaining brand reputation, and speed of delivery.

Factor 2 involves the variables specific to Internet-based competition, which are differentiated from traditional off-line business factors. Among the variables loading on Factor 2 are security of online transactions and ease of payment. As a result, this dimension is consistent with efforts to differentiate by focusing on characteristics particular to e-business, and it is labeled "Internet-Specific Differentiation." Although security and ease of payment are also valuable in traditional industries as well as e-business, lack of physical elements (face-to-face transaction in physical space) in e-business makes them particularly important. It should be noted that "Internet-specific" does not mean "Internet-only."

Variables loading on Factor 3 include an emphasis on niche and specialized markets, while also emphasizing lower administrative expenses. This factor is labeled "Focus."

Table 3
Results of Factor Analysis

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
V1. Broad product range	-0.55724	-0.21762	0.36193	0.11084	-0.33452
V2. New product development	0.77921	0.32298	-0.03628	-0.01794	0.06616
V3. Extensive customer service capabilities	0.52482	0.47834	0.28653	-0.05255	0.10350
V4. Expenditure on R&D	0.75255	0.03304	0.08277	-0.19600	-0.00122
V5. Response to market	0.69430	0.19035	0.40005	-0.04494	-0.06528
V6. Early catch on customer needs	-0.70509	-0.20753	-0.25676	-0.08549	0.24449
V10. Image building of firm and product	0.47672	0.39844	0.21590	-0.39713	-0.01869
V18. Delivery speed	0.46518	0.39084	-0.22546	0.06044	-0.03780
V13. Serving special geographic markets	-0.18186	-0.65581	-0.02754	0.05398	0.16246
V16. Online security	0.27258	0.80141	0.03431	-0.02452	-0.12716
V17. Easy to pay	0.09571	0.82675	0.14435	0.03116	-0.00792
V8. Continuing concern for lowest S&A expenses	-0.01672	0.29983	0.70185	0.15561	0.28919
V9. Emphasis on niche market	0.15891	-0.04492	0.82693	-0.08592	-0.07440
V14. Emphasis on specialized market	0.31717	0.15556	0.47605	-0.30685	-0.32599
V11. Emphasis on intangible asset including patent	0.24272	0.38218	0.00647	-0.54203	0.38422
V15. Economy of scale	-0.04751	0.06490	-0.04128	0.87194	0.05888
V20. Lower price	0.46948	0.06649	0.09411	0.45610	-0.14706
V12. Average age of major products	0.04955	-0.15302	0.08948	-0.05280	0.74743
V19. Efficient procurement	0.50615	0.15935	0.14787	-0.00448	-0.57061
Eigen value	3.96519	2.84787	2.01093	1.61962	1.48784

Factor 4 is related to competitiveness based on costs and, in turn, price. Variables loading on this dimension include an emphasis on economies of scale and lower costs and competitive prices. This factor is very similar to the generic strategy of "Cost Leadership," and thus we use this label.

Finally, Factor 5 includes variables associated with the product life cycle. Variables loading on this factor were efforts to shorten the product life cycle and efficient procurement. This factor is labeled "Product Proliferation."

Types of Strategy

Cluster analysis was applied to the set of strategic factors previously identified by factor analysis in order to identify different strategy types and to examine the relationship between strategy type and firm performance. Ward's method, an agglomerative hierarchical clustering procedure, was used. Table 4 shows the result of cluster analysis. F values indicate that the five clusters or strategy types summarized in Table 4 are meaningfully different from one another. The Duncan Grouping Test also shows that there are significant differences among the clusters.

The first strategy type has the highest scores on three of the five strategic dimensions and it is also highly ranked on the two other dimensions. We labeled this "Hybrid Strategy," because firms pursuing this strategy type are engaged in diverse market domains with diverse products, take advantage of online specific differentiation factors, and, at the same time, pursue cost advantage. These firms may look like Porter's (1980) stuck-in-the-middle companies, however, this strategy is totally different in that a high level of resources is committed on almost all of the strategic dimensions. Similar combinations of strategic elements have also been found in other studies (Carter et al, 1994; Kim & Mc Intosh, 1999; Zajac & Shortell, 1989). Porter did mention the possible combination of differentiation and cost leadership, but only in the case of firms pursuing the focus strategy. Since the integrated strategy found in this study has a negative value on focus (-.00824), we can conclude that this result represents a successful merging of broad differentiation and cost leadership.

The largest number of sample firms ($n = 19$) belonged to the second strategy type. This type has a positive and distinctive value only on the cost leadership dimension (.78757). (Although it is ranked second on this dimension behind the hybrid strategy, the two groups are not statistically different according to Duncan Grouping Test results.) With little emphasis on focus, market sensitivity, or product development, these appear to be electronic shopping malls competing solely on the basis of price. This strategy type was labeled "Cost Leadership."

The third strategy type occupies a less than even mediocre position on every strategic dimension. Other than the score on Internet-specific differentiation, which is close to zero, all of the other strategic dimensions carry negative values. This may reflect lack of clear strategic direction and resource commitment, representing the prototypical "stuck-in-the-middle" case. Still, 15 firms, or a

Table 4
Results of Cluster Analysis

	Cluster I (n = 12) Integrated Strategy	Cluster II (n = 19) Cost Leadership	Cluster III (n = 15) Stuck-in-the- Middle	Cluster IV (n = 12) Focused- Differentiation	Cluster V (n = 17) Online Focus	F Value	Duncan Grouping Test ($\alpha = 0,05$)
Market Leadership	.7695125(1)	-.1393342(3)	-.2263747(4)	.2004550(2)	-.3292147(5)	2.916**	I IV, IV II III V
Internet Specific Differentiation	.8348433(1)	-.9024679(5)	.1973480(3)	-.3685483(4)	.5053612(2)	12.198***	I V, V III, III IV, IV II
Focus	-.0082400(3)	-.1102679(4)	-1.2426947(5)	.5683075(2)	.8243935(1)	19.316***	V IV, I II, III
Cost Leadership	.8428858(1)	.7875768(2)	-.5532913(4)	-1.2178508(5)	-.1273518(3)	24.242***	I II, V III, IV
Product Proliferation	.5161492(2)	.1831842(3)	-.1938967(4)	.8383542(1)	-.9897694(5)	11.592***	IV I, I II, II III, V

*: $p < .1$ **: $p < .05$ ***: $p < .01$

Numbers in parentheses are ranks of scores in descending order

full 20 percent of the sample, were pursuing strategies characterized by using this strategy type, and it may be a characteristic of the chaotic early e-business environment (Kim & Mc Intosh, 1999).

The fourth strategy type resembles Porter's differentiation strategy. This type scores high on market leadership and product proliferation dimensions, indicating an emphasis on staying sensitive to customer needs through diverse products with short life cycle. Since this type scores lowest (-1.21785) on the cost leadership dimension, it combines premium pricing with differentiated marketing efforts. It also, along with the fifth cluster, scores very high on the focus dimension. As a result, this strategy is labeled "Focused Differentiation."

The last strategy type shows the highest score on the focus and Internet-specific differentiation dimensions, while also ranking very low on the other dimensions. These firms do not appear to be concerned with price competition or overall market leadership. Instead, they appear to aim at a small segment of online customers, emphasizing Internet-specific factors such as transaction security and payment convenience. This strategy type is labeled "Online Focus."

Overall, we observe all of Porter's strategy types in our analyses of data gathered from Internet businesses, so we conclude that Proposition 1 is supported. The major differences are the presence of the successful hybrid strategy type and the absence of a pure differentiation strategy. Emergence of the hybrid strategy draws our attention. Twelve firms pursued the hybrid strategy, while fifteen firms were classified as stuck-in-the-middle. It indicates that hybrid strategy is an additional, distinctive strategy type in e-business, not just an anomaly.

Strategy Types of Pure Plays and Clicks and Bricks

We further divided the sample into pure plays and clicks and bricks to see if any differences in the distribution of strategy types existed that could be explained by firm type. Since these were nominal categorical variables, we used Lambda value and Chi-square tests and found no significant differences between the two groups (λ , $p = .437$; χ^2 , $p = .557$). Whether a firm was a pure online or a brick and click player did not make a difference in the type of strategy it employed.

Relationship Between Strategy and Performance

The relationships between strategy types and performance are presented in Table 5. The five separate subjective performance measures as well as an aggregated, or average performance measure are shown. Also included is the objective performance indicator that is based on average Web site traffic.

According to the Duncan Grouping test, the five strategy types clustered into two meaningfully different groups for both the subjective and objective performance measures. Based on our analysis, we can say 1) that firms using the cost leadership strategy were, without exception, the worst performers, and 2) those firm employing the hybrid strategy were the best performers. The performance of firms employing focus strategies was between these two groups. Therefore, both Propositions 2 and 3 were supported by our analyses.

Table 5
Strategy Types and Performance

	Cluster I (n = 12) Integrated Strategy	Cluster II (n = 19) Cost Leadership	Cluster III (n = 15) Stuck-in-the- Middle	Cluster IV (n = 12) Focused- Differentiation	Cluster V (n = 17) Online Focus	F Value	Duncan Grouping Test ($\alpha = 0,05$)
Sales	4.5833(1)	3.6000(4)	3.6471(3)	4.0000(2)	3.3158(5)	3.27(p=.016)	I, IV V III II
Growth Rate	4.4167(1)	3.4211(5)	4.0000(3)	4.1667(2)	3.9412(4)	2.01(p=.102)	I, IV III V II
Growth Potential	4.7500(2)	3.9474(5)	4.8667(1)	4.7500(2)	4.5882(4)	4.17(p=.004)	III IV I V, II
Profit	4.3333(1)	3.2105(5)	3.6667(4)	3.8333(3)	4.1176(2)	3.35(p=.014)	I V, IV III II
Overall Firm Performance	4.5833(1)	3.5263(5)	4.2667(2)	4.2500(3)	3.9412(4)	2.93(p=.026)	I, III IV V II
Subjective Performance ^{a)}	4.5333(1)	3.4842(5)	4.0800(3)	4.2000(2)	4.0471(4)	4.05(p=.005)	I IV III V, II
Objective Performance ^{b)}	5191(1)	15612(3)	11987(4)	17586(5)	15120(2)	2.11(p=.088)	I, III V II IV

a) Average score of five performance measure items

b) Numbers in parentheses are ranks. The smaller the value, the higher the rank.

This study found a successful hybrid strategy in addition to Porter's (1980) concept of a low-performing stuck-in-the-middle strategy. Yet, firms pursuing a pure cost leadership strategy experienced even lower levels of performance than firms pursuing the low-performing stuck-in-the-middle strategy. Firms pursuing the successful hybrid strategy enjoyed superior performance across all five subjective performance measures as well as the objective performance measure, while firms pursuing the cost leadership strategy ranked very low on every performance measure.

When we further divided the sample by firm type (pure play and clicks and bricks) to produce ten distinct groups of firms, the pure play firms pursuing the hybrid strategy (Group 2) were the best performers on the subjective performance measures. However, for the clicks and bricks firms, those pursuing the stuck-in-the-middle strategy (Group 5) showed the highest performance. No significant performance differences existed between these two groups, however (Table 6). Pure online firms employing the cost leadership strategy (Group 4) again showed the lowest performance.

The differences between the firms in Group 5 and Group 6 draw attention. Both sets of firms use the same strategy, stuck-in-the-middle, however, the clicks and bricks firms (Group 5) showed the highest performance, while the pure play firms (Group 6) showed distinctly lower performance, providing empirical support for Proposition 4.

Discussion

Before discussing the results of this study, we must acknowledge its limitations. First, we studied Korean cyber malls, which represent a rather narrow portion of the entire e-business space. Additionally, cyber malls are representative of B2C commerce only, so our findings may not apply to B2B (business to business), B2G (business to government), G2C (government to consumer), and C2C (consumer to consumer) variants of e-business. And, the study's country-specific focus suggests that it may not be applicable to other nations.

The low response rate may also limit our study's findings. By taking advantage of the potential reach of an online questionnaire, this study surveyed the entire population of 1,009 online shopping malls, but the final sample was only 75 firms. During the ten-day period that followed the distribution of our survey, 215 questionnaires were returned unanswered either because the "firm no longer exists," or the "address changed," reflecting the volatile nature of e-business. Since, we believed it would take ten minutes to complete the questionnaire, and considering the short attention spans that are a characteristic of cyberspace — according to one study, attention spans rarely exceed 15 seconds (Williams & Richard, 2000) — and the large amount of junk mail many Internet users receive, our study's response rate may actually be surprisingly high. But still, the low response rate raises a concern regarding the representativeness of the sample firms.

Table 6
Strategy Types and Performance with Type of Firms Considered

	Cluster I (n = 12) Integrated Strategy		Cluster II (n = 19) Cost Leadership		Cluster III (n = 15) Stuck-in-the- Middle		Cluster IV (n = 12) Focused- Differentiation		Cluster V (n = 17) Online Focus		F Value	Duncan Grouping Test ($\alpha = 0,05$)
	on & off 1	on 2	on & off 3	on 4	on & off 5	on 6	on & off 7	on 8	on & off 9	on 10		
Sales	4.57	4.60	3.61	2.66	4.33	3.11	3.83	4.16	3.60	3.71	2.68***	215871039 8710396 7103964
Growth Rate	4.14	4.80	3.76	2.66	4.83	3.44	3.83	4.50	3.90	4.00	2.8***	528110973 81109736 64
Growth Potential	4.57	5.00	4.30	3.16	4.83	4.88	4.83	4.66	4.60	4.57	3.33*	2657891103 4
Profit	4.28	4.40	3.46	2.66	4.00	3.44	3.50	4.16	3.90	4.42	2.34**	1021859 7364
Overall Firm Performance	4.42	4.80	3.69	3.16	4.66	4.00	4.00	4.50	4.00	3.85	1.81*	2581 7691034
Subjective Performance ^{a)}	4.40	4.72	3.76	2.86	4.53	3.77	4.00	4.40	4.00	4.11	3.35***	25 18109763 4
Objective Performance ^{b)}	4433	5733	13906	19309	13242	11151	18358	16814	11735	19957	1.24	21 695387410

*: $p < .1$ **: $p < .05$ ***: $p < .01$ a) Average score of five performance measure items b) Numbers in parentheses are ranks. The smaller the value, the higher the rank.

Our performance measures are another limitation. In particular, our objective measure is merely a numerical record of site visits, and so it cannot assess other important dimensions of performance such as the rate of repeated visits or the connection between site visits and actual purchase behavior, not to mention financial performance. However, there is a silver lining. Garbi (2002), in a recent study, found that the rate of unique visitors, the e-business-specific measure, showed significant correlations with market value, net income growth, and employee growth. This implies that cyberspace-specific indicators, such as page views, stickiness, click-through rate, and conversion rate, may not be unreliable as performance measures. Also, the subjective financial measures pose a potential common method bias problem. We can only guess that the subjective and objective measures are somewhat correlated based on the similar analysis results using either variable as the performance measure. Direct comparison was not possible, since the subjective measures are *discrete* variables varying between 1 and 5, while the objective measure is a *continuous* variable ranging between 1 and 20,000.

Finally, cluster analysis is regarded as an art rather than a science, turning to the researcher for interpretation of the result to a large extent. Although we stopped increasing the number of clusters when the semi-partial R^2 value noticeably diminished, the resulting clusters could be an inevitable consequence of cluster analysis.

In spite of these limitations, we believe our study makes an important early contribution toward understanding the relationship between strategy and performance among e-business firms. A few of our findings are particularly noteworthy. First, our results lead us to conclude that, among e-business firms, a hybrid, integrated strategy is a must, and that a traditional cost leadership strategy is unlikely to be associated with success. Our results also suggest that focused strategies — those that are either narrowly defined differentiation strategies or those that focus on Internet-specific characteristics such as security and convenience of transaction — may have a better chance of success than cost leadership strategies.

Our findings could be explained in several ways. First, a high-performing hybrid strategy could be only a temporary phenomenon observed during the early stages of an industry life cycle (Porter, 1980). As the industry matures and as firms begin to leverage the advantages of either a highly competitive cost structure or their ability to differentiate their products and services, firms pursuing a hybrid strategy could be weeded out. Alternatively, our findings may offer evidence of an emerging economic paradigm represented by the Internet. The Internet radically reduces search and switching costs, enabling customers to search for optimal prices. At the same time, trust, credibility, and brand name recognition — which are at the heart of differentiation — become even more important in the e-business world where there is little or no physical contact between customers and company personnel. Porter's argument with hybrid or integrated strategies was the potential for a lack of clear commitment to any

set of strategic objectives. The successful hybrid strategies we identified were among firms that seem to be both integrating and emphasizing a number of diverse strategic objectives.

The study also found that the relationship between strategy type and performance is moderated by firm type. While pure online firms enjoyed success when pursuing hybrid strategies, clicks and bricks firms did not fare as well when pursuing an integrated strategy. The contrasting results between pure plays and clicks and bricks firms may reflect the resource differences between those two groups of firms. Most of the pure plays in our sample were new firms. Lacking a significant infrastructure and brand recognition, these start-up pure play firms may have felt compelled to establish their strategic posture by offering both differentiated features and low prices.

On the other hand, the clicks and bricks firms tended to be late-moving, established corporations that entered e-business only after they had found merit in the experiences of early-mover online firms. They may have compensated for any initial weaknesses in their online operations by leveraging their off-line operations. For example, Barnes & Noble appealed to customers by offering pick-ups of online orders at its off-line bookstores. This advantage of having both online and off-line operations may also have worked as a liability, however, since the clicks and bricks firms that pursued a hybrid strategy had, on average, lower levels of performance than the pure play firms. Perhaps the lower performance of clicks and bricks firms with the hybrid strategy is due to conflicts between online and off-line components of the same company.

Conclusion

Our results suggest that Porter's generic strategies are applicable to e-business and that they indeed explain performance differences across firms. The types of strategies found in this study are not different — with some minor exceptions — from those found in previous studies dealing with generic strategies in traditional industry settings. One newly observed strategy type is an Internet-focused strategy emphasizing factors specific to Internet firms, such as security of transactions, convenience of payment, and speed of delivery. These are regarded as critical success factors in any Internet business (Smith et al, 1999).

Contrary to conventional wisdom, but consistent with the logic of business in the digital realm, the cost leadership strategy exhibited the lowest performance. Firms pursuing the hybrid strategy combining cost leadership and differentiation exhibited the highest levels of performance. Further analyses examined the mediating influence of firm type, and found that pure plays (exclusively online firms) pursuing this hybrid strategy outperformed all others. Our results suggest that cost leadership and differentiation can be combined, and that perhaps they must be combined, for firms to be successful in e-business.

Ashmos et al (2000) found that hospitals, facing a complex environment, with higher strategic complexity outperformed those with lower strategic complex-

ity. In their study, higher strategic complexity means that a firm pursues “competitive advantage through a wider range of strategic activities (i.e., both cost leader and differentiator type activities), representing a more complex strategy (Ashmos et al, 2000: 587).” Merrilees (2001) argues that some e-business firms have successfully employed a combination of two generic strategies. For example, Amazon.com is very competent at all activities involving differentiation elements branding, innovation, and channel management as well as lowering costs. It is hard to classify Amazon.com into either strategy-type.

Our major contribution is to provide early, preliminary data suggesting that the important existing strategy concept of generic strategies is relevant to and can be applied to a new business environment. Considering the predominance of case studies in the e-business field, we hope this study can provide a useful platform for further rigorous, empirical studies that draw on large samples of e-business firms. The lack of performance measures and data may have prevented systematic empirical studies of e-business thus far, so another contribution of this study is its adaptation of existing subjective measures (Robinson & Pearce, 1988) and use of an objective measure for assessing the performance of e-business firms. We also found our online questionnaire to be a useful way of gathering survey data, superior to conventional mail surveys in terms of time, costs, and convenience.

This study also offers some tentative implications for management practice. First, the results provide support for the viability and success of hybrid strategies for e-business firms. The study also suggests that the choice of strategy depends on firm type (pure play vs. clicks and bricks). Possible synergies and potential conflicts between online and off-line operations, as suggested by this study, should be important considerations as incumbent firms develop their Internet strategies.

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Eonsoo Kim is Professor of Management at Korea University. Professor Kim received his Ph.D. from the University of Illinois. His research interests focus on strategic change, process, and implementation. He has written on corporate and business strategy issues, including strategic responses to environmental change, downsizing and turnaround, network and project-based organizations, and application of military art of war to strategic management.

Daeil Nam is Senior Consultant of Management Consulting Center at LG Economic Research Institute. Mr. Nam received his Master's degree from Korea University. His research and consulting realms focus on strategy formulation and implementation including industry consolidation, convergence marketing, global

market strategy, corporate venture incubating, corporate governance, leadership appraisal, and vision.

Larry Stimpert is Professor of Economics and Business at Colorado College. Professor Stimpert received his Ph.D. from the University of Illinois. His research interests focus on top managers and their influence on strategic decision making and organizational strategies. He has written on many strategy issues, including managerial responses to environmental change and organizational decline, business definition and organizational identity, the management of corporate strategy and diversification, corporate governance, and company strategies following deregulation.

