

## *Strategic orientation and performance of internet-based businesses*

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**Abstract.** *Many of the pure internet-based businesses that proliferated over the past 5 years have encountered serious problems as their lofty valuations have plunged. Industry observers have attributed this phenomenon to a variety of factors, generally framed in terms of poor conceptualization or implementation of the 'business model'. This study explores an often-used concept in strategic management called 'strategic orientation' and applies it to internet-based businesses. Based on an analysis of over 100 public businesses, firms that cluster together with similar strategic orientation are observed. These strategic groups are then analysed for performance differences. The results are discussed with the intent of learning from the dot-burn effects as we evolve to the next generation of internet-based business.*

**Keywords:** strategic groups, e-commerce, e-business, performance, strategic orientation

### INTRODUCTION

The internet has transformed the way business is conducted. Many pure internet-based businesses, referred to as dot.coms (e.g. Amazon.com, WebMD.com, Tickets.com) have emerged over the past 5 years. The value propositions of these firms are based upon achieving new levels of operational excellence, customization, customer and supplier integration, and productivity (Jin & Robey, 1999). Unfortunately, many of these businesses have experienced significant problems. An estimated 210 dot.coms failed in 2000, many of them experiencing high cash burn rates and inability to generate more capital in their attempt to maintain high growth rates without commensurate profitability (Mullaney, 2001).

The post-mortem analysis of these failures has been the topic of debate in the trade press. Some discussions focus on tactical issues like poor customer service, poor order fulfilment, inadequate technology infrastructure and channel conflict (Krovi, 2001). Others emphasize the financial consequences of falling into the negative spiral of focusing on customer acquisition and growth at any cost without correspondingly emphasizing business value and profit

(Johnson, 2000). These discussions have been framed using the term 'business model' as the conception of how the business generates its revenue streams. It is our contention that focusing on higher-level conceptualizations of the business model can contribute towards learning from these experiences. We refer to this as 'strategic orientation'. Strategic orientations are reflected in deployment of resources that generate superior business performance. This relegates thinking back to a more traditional view of what firms should do in order to generate returns that exceed the resources deployed, a concept termed as true economic value.

Guided by significant prior research on strategy, this view can be operationalized in many ways (Segars & Grover, 1994). More importantly, it can help articulate corporate positions such as risk disposition and innovative propensity that have somehow got lost in the melee of e-commerce. By viewing internet-based businesses through the lens of strategic orientation, we can explore patterns of firms that follow consistent orientations and relate them to performance metrics.

The objective of this study is to provide a systematic examination of the performance of over 100 internet-based businesses using strategic group analysis. The approach followed is exploratory rather than confirmatory in that no *a priori* hypotheses regarding successful strategic orientations are proposed. However, *ex post* evaluation of the results can provide valuable insights into the role of strategic orientation as a mediator between e-business initiatives and performance. The next sections describe prior research on strategic orientation, the nature of internet-based business and performance impacts of information technology initiatives. This is followed by a discussion of the methodology. The final sections describe the results and their interpretation with an eye towards the next generation of internet-based businesses.

## BACKGROUND

### Strategic orientation

The concept and operationalization of strategy has been the subject of much discourse in the strategic management literature. Miles & Snow (1978) and Porter (1980) describe the two more popular representations of strategy. Miles & Snow describe strategy as an ongoing process of evaluating purpose as well as questioning, verifying and redefining the manner of interaction with the competitive environment. They argue that complexity of the strategy process can be simplified by searching for patterns of behaviour in organizations. These patterns of emergent behaviour can be used to describe the underlying processes of organizational adaptation. Basic strategic orientation of organizations is described in terms of a typology of defenders, prospectors, analysers and reactors. Each orientation differs with respect to risk disposition, innovativeness and operational efficiencies. Later, in the 1980s, Porter's approach to strategy became the dominant paradigm. Using a five-force framework, Porter provided systematic thinking about how competitive forces work at the industry level and how these forces determine the profitability of different industries. Porter then describes strategic orientation such as low cost or differentiation as a means of altering the firm's position in the industry *vis-à-vis* competitors and suppliers.

More recently, models of strategy that emphasize heterogeneity of firm-specific resources have gained credence (Barney, 1991). This view advocates that strategy involves mustering resources and creating capabilities that are difficult to imitate by competitors, resulting in superior rents. Therefore, while the typological approaches view strategic orientation as an issue of how firms position themselves with respect to competitors, resource-based perspectives focus on exploitation of firm-specific assets (Teece *et al.*, 1997).

We view these paradigms of strategy as complementary. Organizations have deliberate or emergent strategic orientations based on a variety of internal (resources) and external (industry) factors. The reflections of these orientations exist in the plethora of decisions made on use of resources. The term 'strategic group' has been used to refer to groups of organizations that exhibit patterns of consistency in strategic orientation. The broad orientation can be described in terms of decisions involving the scope of the business: market segmentation, product characteristics, and geographic reach or the resource commitments of the business: i.e. where resources are deployed in order to maintain competitive advantage. Thus, firms with similar scope and resource orientations would fall in the same strategic group. Similarly, organizations that are symmetric with respect to cost structures, product diversification, control systems, rewards and punishment might cluster into a strategic group (Hunt, 1972). In other words, strategic orientation can be used to identify firms in an industry that are maximally similar within groups and maximally different between groups with respect to this orientation (Segars & Grover, 1994).

This study explores strategic orientations of internet-based businesses, by observing patterns of strategic groups. These patterns are based on proxy representations (e.g. financial indicators like debt to equity ratio) of selected dimensions of strategic orientation (e.g. risk-taking propensity of the firm). From a research perspective, formulation of a strategic group problem involves identification of the dimensions of strategic orientation that are pertinent to the research context, and identification of proxies representing these dimensions. The groups, once identified, provide a 'typology' of strategic orientations that can be further analysed. Scholars in strategic management accept the definition and usefulness of strategic group methodologies to study strategic orientation, despite some minor differences in the treatment of strategic groups in empirical research settings (Thomas & Venkatraman, 1988).

Below, we describe characteristics of internet-based businesses, which then leads to further discussion of appropriate strategic orientation indicators for these kinds of businesses.

### **Internet-based business**

The internet provides a global infrastructure that enables compression of time and space, integrated supply chains, mass customization and navigational ability (Watson & McKeown, 1999). For instance, Evans & Wurster (2000) discuss the impact of the internet as breaking down traditional trade-offs between richness of interaction possible with a customer and the number of customers a business can access or products it can offer. Internet-based business can compete on huge selections of products (CDs, books) as they are not constrained by physical stores. Also, richer interaction (e.g. check order status, seek online advice) and customized

relationships with large numbers of customers at incremental costs are increasingly feasible with the economics of information (Jin & Robey, 1999). Jin & Robey (1999) also suggest that through electronic linkages with suppliers and customers, internet-based businesses may be able to operate with no or little inventory. Tapscott *et al.* (2000) refers to new internet-based businesses as business webs, a system of meshed suppliers, distributors, service and infrastructure providers, and customers that use the internet as the basis for business communications and transactions. Several of these businesses are 'infomediaries' that help buyers and sellers find information on each other. These infomediaries grow in value as they build a strong base of buyers and suppliers, but as is being learnt, can just as easily lose value and spiral down into oblivion (Grover & Teng, 2001).

It is also useful to note the brutality of digital economics. Many internet-based businesses 'selling' information and other digital services experience high fixed costs in compiling the product or service and low marginal costs. In competitive markets, pricing would approach the marginal cost, which would not allow suppliers to survive. Therefore, value-based pricing strategies, such as bundling different information products, providing personalized services, etc., become critical (Grover & Ramanlal, 1999). Many firms could not create adequate 'value' and had to invest inordinate amounts of cash in acquiring customers and growing their way to profitability (Gilbert, 2000).

### **Internet-based businesses and strategic orientation**

Much strategic management literature has been devoted to identifying attributes or dimensions of a company's strategic orientation. Some studies attempt to operationalize strategy construct into its key attributes, such as aggressiveness, analysis, defensiveness, futurity, proactiveness and riskiness (Venkatraman, 1989). Others identify dimensions based upon resource deployment in marketing, production, R&D, risk disposition, asset management and production efficiencies (Snow & Hrebiniak, 1980; Hambrick, 1983; Cool & Schendel, 1987; Douglas & Rhee, 1989; Fiegenbaum *et al.*, 1990; Das *et al.*, 1991; Veliyath & Ferris, 1997).

Internet-based businesses include portals, travel sites, e-tailers, and providers of financial and informational services. These businesses attempt to leverage the internet infrastructure and digital economics in order to gain strategic positioning within the marketplace. For internet-based businesses, four major dimensions of strategic orientation were selected as particularly pertinent: *risk disposition*, *innovativeness*, *operational efficiency* and *marketing intensity*.

Risk disposition reflects management's willingness to invest in projects to fuel growth. Financial resources are utilized to pursue risky projects. Because growth has been a much-discussed aspect of internet businesses, capturing the aggressiveness of the company with respect to this dimension is particularly relevant (Grover *et al.*, 2001). Innovativeness reflects organization's commitment towards supporting innovation. This would include the ability of organizations to generate slack resources and commit funds to support innovative initiatives. Internet businesses are often ventures that depend upon the minds and imagination of its people and their ability to generate innovative ideas and solutions. For instance, these could be in the form of radical or incremental technological and marketing innovations deployed on the

company's website (Garcia & Calantone, 2002). It has been suggested that there is a considerable learning curve that internet-based businesses have to go through in adapting their processes in addressing customer needs (Poole, 2001). So, capturing organizational commitment to generating and implementing innovative ideas is a pivotal dimension that needs to be considered.

Operational efficiency captures managerial control over operations and assets. It depicts efficiency and effectiveness of organizational processes and co-ordination efficiency of the firm with its suppliers and epitomizes the essence of many internet-based businesses (Jin & Robey, 1999). Capturing this dimension is important because lack of integration between front-end and back-end systems and absence of efficient electronic linkage with suppliers may be reflected in low operational efficiency of internet-based businesses (Lee & Whang, 2001). Marketing intensity, which has been used as a facet of innovativeness in previous studies (Segars & Grover, 1994), is particularly important to internet-based businesses. It reflects the aggressiveness of an organization in pursuing customers and investing in customer-facing processes such as order fulfilment. Efficiency in customer acquisition and order fulfilment are vital for internet-based businesses. These two processes have been highlighted as major antecedents to the cash flow problems facing internet-based businesses (Johnson, 2000).

It is important to note that these dimensions reflect broad aspects of strategic orientation. Within each dimension there could be a variety of sub-dimensions that reflect different aspects of the domain. For instance, operational efficiency could include cost efficiency (e.g. pursuit of high margins) and co-ordination efficiency (e.g. pursuit of low co-ordination overheads). Table 1 provides the list of sub-dimensions.

### **Internet-based businesses, strategic orientation and performance**

There is limited research on the economic impacts of internet-based businesses, although market-based valuations of e-commerce announcements have been examined (Subramani & Walden, 2001). However, there is significant research in the domain of IT investments and business value. Early production-economics based studies suggest that IT investments have no impact on productivity (Roach, 1987; Loveman, 1994) although later work using different data sets show that IT does indeed contribute to productivity (Brynjolfsson & Hitt, 1996, Lee & Barua, 1999). Many reasons are proposed for this change, including better measurement methodologies, recency effects and the impact of business process change that leverage technology. It is being recognized that economic impacts do not emanate from IT investments directly, but through the value created by the interaction of these assets with the 'complementary assets' of the firm (Clemons & Row, 1991). Consistent with the resource-based view of the firm, Bharadwaj (2000) proposes that the ability to mobilize IT resources in conjunction with other organizational resources is critical to superior performance. This is particularly true for internet-based businesses, where much of the core IT infrastructure can be easily accessed or duplicated.

In this study, strategic orientation reflects a mediating effect between IT deployment and business performance. We argue that the indicators used for deriving strategic orientation

**Table 1.** Strategic variables and measures

Dimensions	Variables	Measures	Citations
Risk disposition	Short-term risk	Quick ratio: Short-term receivables/ current liabilities	(Dess & Davis, 1984) (Cool & Schendel, 1987) (Douglas & Rhee, 1989) (Fiegenbaum <i>et al.</i> , 1990) (Segars & Grover, 1994; 1995)
	Long-term structural risk	Debt to equity ratio: Total debt/total shareholders equity	(Thomas & Venketraman, 1988) (Segars & Grover, 1994; 1995)
Innovativeness	Innovative propensity	R&D ratio: R&D expenditure/sales*	(Hambrick, 1980) (Snow & Hambrick, 1980) (Hambrick, 1983) (Cool & Schendel, 1987) (Segars & Grover, 1994; 1995)
	Slack resources	Cash flow ratio: Firm cash flow/ investment	(Bourgeois, 1981) (Chakravarthy, 1986) (Douglas & Rhee, 1989) (Das <i>et al.</i> , 1991) (Segars & Grover, 1994; 1995)
Operational efficiency	Cost efficiency	Net margins: Sales – cost of goods sold/sales	(Hofer & Schendel, 1978) (Dess & Davis, 1984) (Cool & Schendel, 1987) (Douglas & Rhee, 1989) (Fiegenbaum <i>et al.</i> , 1990) (Das <i>et al.</i> , 1991) (Segars & Grover, 1994; 1995)
	Co-ordination efficiency	Co-ordination ratio: General and administrative costs/sales	(Shin, 1997) (Im, 2000)
Marketing intensity	Advertising efficiency	Advertising ratio: Advertising expenditure/sales	(Hambrick, 1980) (Snow & Hambrick, 1980) (Hambrick, 1983) (Cool & Schendel, 1987) (Segars & Grover, 1994; 1995)
	Order fulfilment efficiency	Marketing and sales ratio: Marketing and selling costs/sales	(Hambrick, 1980) (Snow & Hambrick, 1980) (Hambrick, 1983) (Cool & Schendel, 1987) (Segars & Grover, 1994; 1995)

\*Product development expense (expenditure on website development and maintenance)

are manifestations of the outcomes of corporate decisions, after including the impact of technology on the business. By examining strategic groups of firms that are similar in their strategic orientation, we can observe how the multifaceted resource deployment decisions and outcomes reflected in these groups play an important role in determining business performance.

## RESEARCH APPROACH

In order to determine strategic orientation of internet-based businesses, careful strategic group analysis needs to be conducted. A flow diagram of strategic group formulation is illustrated in Figure 1 and discussed in subsequent paragraphs. Many existing studies in strategic management (see Thomas & Venkatraman, 1988) and information systems (e.g. Segars & Grover, 1995) use this approach to identify patterns of strategic orientation and (in some cases) lon-

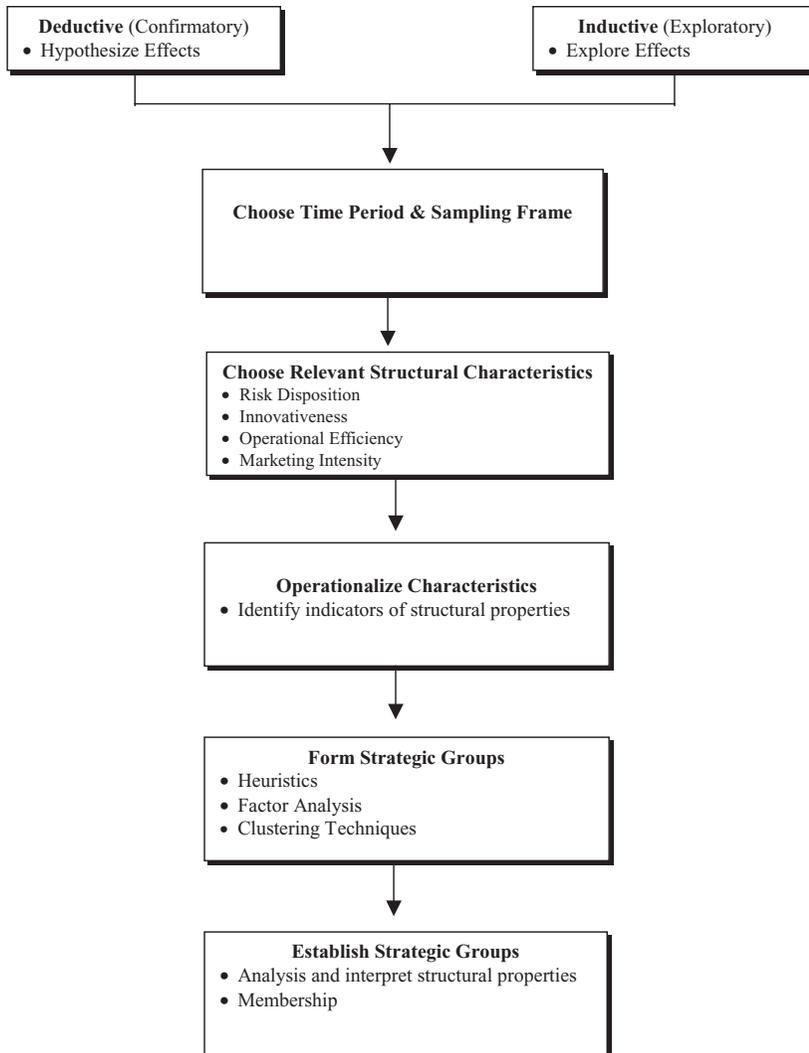


Figure 1. Research methodology for strategic group analysis.

gitudinally observe changes in group structures or membership. The approach followed in this study (illustrated in Figure 1) is consistent with prior work.

Research intent can be deductive or inductive. In the former case, the intent is to verify strategic groups that are proposed by theory. In the latter case, the strategic groups emerge from the data analysis and can be interpreted to form the basis for theory building. In this study, an inductive approach is followed. It is argued that given the newness of the phenomenon being investigated, this approach is appropriate as *a priori* hypotheses would be mainly based upon expository review, observation or speculation.

The next step involves selection of an appropriate time and sample frame. These are based upon the research purpose. Because our objective is to explore performance of internet-based businesses and derive predictive implications, it is appropriate (1) not to use standard industry classification (SIC) codes as is typical, but to use other sources to identify these pure internet-based businesses; and (2) to focus on the recent fiscal year 2000 which was the most challenging for these companies.<sup>1</sup> By emphasizing surviving companies, all based upon a common set of digital economic tenets, experiencing common adverse economic conditions, the credence of the groups is enhanced. Three criteria are used for sample selection:

- 1 Companies should be only pure internet companies. The website should be the only interface between the company and its customers. (This also includes companies such as Barnesandnoble.com that is operating as an independent company separate from the Barnes and Noble book stores.)
- 2 The companies should be in operation for over 1 year.
- 3 The companies should be public and consequently have to publicly disclose financial information.

Two researchers through an extensive search of the compilations of interactive week, NASDAQ, and Media Matrix identified internet-based businesses that met the sample selection criteria. The financial data for the year 2000 was manually extracted from FreeEdgar, Nasdaq.com and Quicken. In addition, notes to the accounts in the 10k statements were also probed to collect data if they were not available from other sources.

The relevant structural attributes that provide a useful characterization of the strategic orientation of internet businesses are risk disposition, innovativeness, operational efficiency and marketing intensity, as described earlier. The operationalization of these attributes can be based on financial proxies. Mintzberg (1978) argues that financial measures contain elements of realized strategies and therefore provide useful proxies of the firm's resource deployment decisions. A number of these metrics have been successfully deployed in prior research on strategic groups and are used for this analysis. Table 1 illustrates the variables and measures used, along with reference to prior empirical work.

<sup>1</sup>NASDAQ lost 66% of its value during FY2000. While the events of September 11 and the recession in 2001 caused further declines in the sector, these were broad-based economic effects. It can be argued that FY2000 provides better indication of 'steady state' results under non-recessionary conditions.

Risk disposition is assessed through the quick ratio and debt–equity ratio. The first represents short-term operating risk, while the second reflects long-term structural risk. Collectively, these measures can yield insight into management's orientation towards risk (Cool & Schendel, 1987; Fiegenbaum *et al.*, 1990). We operationalize innovativeness through innovative propensity (R&D expenditure/sales) and slack resources (firm cash flow over investment). Innovative propensity has been a popular proxy for innovativeness, while slack resources refer to a firm's ability to generate cash flow for purposes of reinvestment (Chakravarthy, 1986; Das *et al.*, 1991). Operational efficiency reflects both cost efficiency, operationalized through net margins, and co-ordination efficiency, operationalized through general and administrative costs/sales (Cool & Schendel, 1987; Das *et al.*, 1991). Finally, marketing intensity comprises of advertising efficiency or aggressiveness in pursuing customers and efficiency of customer-facing processes (order fulfilment efficiency). The former is operationalized as advertising expenditure/sales and the latter is operationalized as marketing and sales expenses/sales (e.g. Cool & Schendel, 1987).

Several multivariate statistical and judgemental approaches can be used to develop groupings of firms that are consistent with respect to the above variables. Hierarchical cluster analysis is considered appropriate when limited *a priori* knowledge exists on the number of clusters and is used in this analysis.<sup>2</sup> While many clustering algorithms exist, Wards minimum variance criterion was used based on its superiority in simulation studies (Punj & Stewart, 1983; Harrigan, 1985). The clustering criteria of this technique are minimization of within-group sums of squares. Firms are assigned to groups based upon how similar they are with respect to the variables of interest. The pseudo F (mean square between groups divided by the mean square within groups) is used to determine the appropriate cluster solution. Jumps or elbows in plots of cluster solutions plotted against the pseudo F are used to identify the appropriate number of clusters to retain. Analysis of cluster solutions in this study suggested a four-cluster solution. Of course, interpretation of the clusters is subjective and based on the variable means in each cluster. Subsequently, ANOVA and Tukeys' analysis was used to observe performance differences between groups. In this study, return on assets (ROA) was used as a typical proxy for corporate performance.

## RESULTS

Usable data from 136 internet-based businesses<sup>3</sup> that met the sample criteria were collected and analysed. Firms in the sample include portals, e-tailers and service firms. While these firms either sell products or services, website is the only interface between the firms and their customers. None of the firms have a physical counterpart to their website so they are referred to as *pure internet-based business*. Internet is the primary channel that these firms use to conduct business allowing them to *leverage the economics of information*.

<sup>2</sup>Interested observers may refer to Punj & Stewart (1983) for an excellent review of clustering algorithms and decision rules.

<sup>3</sup>A complete list of companies can be accessed at: <http://dmsweb.badm.sc.edu/khawaja/companylist/companylist.htm>

**Table 2.** Correlation matrix

Dimension	Risk disposition	Innovativeness	Operational efficiency	Marketing intensity
Variables/intervariable correlation	Quick ratio & debt to equity ratio -0.175*	R&D ratio & cash flow ratio -0.105	Net margins & co-ordination ratio -0.312**	Advertising ratio & marketing and sales ratio 0.649**

\* $P$ -value  $\leq 0.05$ ; \*\* $P$ -value  $\leq 0.01$ .

While each variable is considered independently, it is useful to note the correlation between the variables within each dimension (see Table 2). In general, all pairs exhibit some correlation but in the case of innovativeness, innovative propensity is not correlated with slack resources, indicating that these variables may reflect completely different aspects of the innovativeness dimension.

Table 3a,b,c describes the results of the cluster analysis. Table 3a provides the mean of each variable within the clusters; Table 3b provides a qualitative interpretation of the means (as low, medium, and high) based on the sample median, and the dimensions of strategic orientation being measured. For instance, a high quick ratio (receivables/current liabilities) represents a 'low' short-term risk. Table 3c provides the average size and age indicators for each cluster.

Table 4a,b,c illustrates the performance analysis as measured by the ROA across each cluster. Table 4a shows that on average, returns are negative, however, firms in Cluster 2 clearly outperform the other groups, with firms in Cluster 3 having the worst performance. Table 4b demonstrates that these differences are significant, while Table 4c uses the Tukey's procedure to test pair-wise differences. All differences are significant with the exception of Clusters 1 and 4. There are only few internet-based businesses that have shown a profit, so it is not surprising to see that average ROA for all clusters is negative. Most of the internet-based businesses are building their way towards profitability, so the likely interpretation can be that firms with lower losses are better performers and may be in a superior position to show a profit in the near future. Based on this premise firms in Cluster 2 have the best performance, followed by Clusters 1 and 4 whose performance cannot be statistically differentiated, and then Cluster 3 which clearly has the worst performance (see Appendix).

### Interpreting the clusters

Successful companies<sup>4</sup> in Cluster 2 tend to have greater long-term structural risk. However, these firms keep short-term liquidity high for fulfilling current or contingent (unexpected) obligations. Their innovative propensity is mixed. While they do not specifically invest much in R&D, they keep a good cash flow for future investments. They have also attained high efficiencies in costs as represented by net margins, co-ordination, advertising and order fulfilment

<sup>4</sup>It might seem odd to call companies with negative returns as 'successful'. However, these firms clearly stand out with respect to the other pure internet firms in the sample.

**Table 3a** Average variable value within clusters

Cluster/variables	Risk disposition		Innovativeness		Operational efficiency		Marketing intensity	
	Short-term risk	Long-term structural risk	Innovative propensity	Slack resources	Cost efficiency	Co-ordination efficiency	Advertising efficiency	Order fulfillment efficiency
Cluster 1 (64) (Moderate)	2.90	0.27	0.32	-0.002	0.27	1.48	0.84	1.47
Cluster 2 (22) (Mature)	3.28	1.56	0.09	1.77	0.41	0.20	0.11	0.31
Cluster 3 (15) (Risky)	1.42	0.15	0.15	-1.57	0.26	0.30	0.08	0.40
Cluster 4 (35) (Novice)	2.20	0.06	0.72	-0.59	0.41	1.07	0.91	2.51

**Table 3b.** Qualitative assessment of variables within clusters\*

Cluster/variables	Risk disposition		Innovativeness		Operational efficiency		Marketing intensity	
	Short-term risk	Long-term structural risk	Innovative propensity	Slack resources	Cost efficiency	Co-ordination efficiency	Advertising efficiency	Order fulfillment efficiency
Cluster 1 (64) (Moderate)	Low	Low	Medium	Medium	Low	Low	Low	Medium
Cluster 2 (22) (Mature)	Low	High	Low	High	High	High	High	High
Cluster 3 (15) (Risky)	High	Low	Low	Low	Low	High	High	High
Cluster 4 (35) (Novice)	Medium	Low	High	Low	High	Low	Low	Low

\*Interpretations made with respect to variables (e.g. lower quick ratio implies higher short-term risk).

**Table 3c.** Average revenue and age of firms within clusters

Cluster	Mean sales (SD) in millions	Mean age of firm (SD) in months
1 (Moderate)	108 (312)	21.64 (10.43)
2 (Mature)	663 (674)	35.22 (13.80)
3 (Risky)	266 (307)	19.00 (8.68)
4 (Novice)	39 (55)	15.80 (6.00)

**Table 4a.** Performance analysis based on return on assets (ROA): descriptives

Cluster	<i>n</i>	ROA (mean)	ROA (SD)
Cluster 1 (Moderate)	64	-0.43	0.40
Cluster 2 (Mature)	22	-0.05	0.15
Cluster 3 (Risky)	15	-0.92	0.53
Cluster 4 (Novice)	35	-0.56	0.45

**Table 4b.** Performance analysis based on ROA: overall anova model (performance differences among strategic groups)

Source	d.f.	Mean square	<i>F</i> - value	<i>P</i> -value	Conclusion
ROA	3	2.37	14.48	<0.0001	Groups are different

**Table 4c.** Performance analysis based on ROA: multiple comparison procedure (Tukey procedure)

Comparison	Mean difference	Standard error	Significance	Conclusion
Cluster 1 vs. Cluster 2 (Moderate vs. Mature)	-0.37	0.1	0.001	Difference is significant
Cluster 1 vs. Cluster 3 (Moderate vs. Risky)	0.50	0.12	<0.001	Difference is significant
Cluster 1 vs. Cluster 4 (Moderate vs. Novice)	0.13	0.08	0.40	Difference is not significant
Cluster 2 vs. Cluster 3 (Mature vs. Risky)	0.86	0.14	<0.001	Difference is significant
Cluster 2 vs. Cluster 4 (Mature vs. Novice)	0.50	0.11	<0.001	Difference is significant
Cluster 3 vs. Cluster 4 (Risky Vs Novice)	-0.36	0.12	0.020	Difference is significant

ratios. These firms tend to be larger and older and have significant brand equity. E-Bay, Yahoo and Amazon all fall in Cluster 2. It seems as if these firms have built a significant customer base. Firms in this group are well known for their high level of personalized services that allow them to achieve both efficiency and effectiveness in leveraging their customer base and generating higher margins. The brand equity reduces the sensitivity of advertising on revenue, as these firms do not seem to spend inordinate amounts of cash on customer acquisition. In fact, they seem to maintain a high level of cash flow as reflected by their low short-term risk and high

slack, allowing them to maintain both flexibility and solvency. We refer to these firms as *Mature*, because of their size and performance superiority.

In contrast to the *Mature* group, we have Cluster 3 firms that have the poorest performance. Surprisingly, these firms are also efficient at co-ordination, advertising and order fulfilment, having low cost to sales ratios in these areas. However, these companies tend to have poor net margins, possibly because of the cost structures of their businesses and/or because of their primary focus on a 'low cost' strategy. These companies have undertaken significant short-term risk, which is depicted in low levels of current assets to pay off short-term obligations, thus increasing the chances of insolvency. Firms in this cluster have low R&D investments and negative cash flow with respect to their investments. We can presume that this leads to short-term flexibility and solvency issues. While relatively smaller than firms in the *Mature* group, these firms are not small. E-tailers such as Buy.com, Stamps.com and Egghead represent this group. While lacking the brand equity of firms in the *Mature* category, this group seems to be threatened by low margins and cost structures that are spiraling out of control. Apparently, these firms have to rely on short-term debts to resolve cost problems. Without the brand equity and growth volume in a slowing economy, the performance of these firms would be particularly sensitive to the quality of their business model and investor perceptions that influence their ability to raise money in the equity markets. We call these firms *Risky*, in reference to their poor liquidity position.

The two remaining groups are comprised of smaller firms. Performance of these two groups is not distinguishable but their strategic orientation is quite different. Group 1 is comprised of firms characterized by low short- and long-term risk, moderate innovation, and low levels of cost, co-ordination and advertising efficiency. Moderate cash flow position allows these firms to expend significant resources in advertising in order to expand their customer base. Solvency is not an issue so moderate investment in R&D (i.e. website development) can potentially yield innovative solutions. These firms seem to be in a struggle to break away from the pack using innovative strategies and enhancing their customer base. However, low cost and co-ordination efficiency, possibly because of lack of scale effects, may be their Achilles heel. Companies such as Bluefly, Peapod and PlantRx fall in this group. We call these firms *Moderate* in order to reflect their prototypical tussle between generating innovative solutions while dealing with lower operational and marketing efficiencies and maintaining a conservative risk posture.

Finally, Group 4 consists of the smallest firms. These firms are mostly innovative start-ups with moderate levels of short-term risk, negative cash flow, high R&D expenses, low co-ordination efficiency and particularly low advertising and order fulfilment efficiency. Firms in this group spend aggressively on innovative initiatives and have higher net margins. But they have to aggressively expend advertising and marketing budgets to attract and retain customers. This expenditure drains the cash outflow and seems to be jeopardizing short-term viability. Tickets, Webvan [declared bankrupt in July 2001] and Ivillage epitomize some of the firms in this group. We call them *Novice* to reflect their size and role in internet-based business.

Both *Moderate* and *Novice* may not have the scale advantage of the other two groups, and this seems to be reflected in their lower co-ordination and order fulfilment efficiency. They also need to invest more in R&D and customer acquisition in order to offer unique value proposition to their customers and build customer base. The *Novice* group includes smaller firms that need

to be more aggressive with respect to R&D and advertising. This creates more short-term risk, but allows them to generate higher margins than firms in the *Moderate* group.

The larger size of firms in the *Mature* and *Risky* groups may permit them to be more efficient in order fulfilment and co-ordination. However, companies in the *Risky* group do not seem very successful in managing short-term risk as they seem to be focusing on using the internet as a low cost channel rather than an opportunity to differentiate or personalize their product. What is clear is that firms in the *Mature* group are benefiting from their size, brand, and personalized services. This enables them to generate superior efficiencies, higher margins, and manage short-term risk very well. *Mature* is the only group that undertakes long-term structural risk. The size and stability of the firms in this group affords them the luxury of being able to raise money in the capital markets.

### Discussion

It seems as if the firms in the *Mature* group reflect a strategic orientation that clearly leverages scale effects. These large firms have many 'suppliers' and a large base of buyers that enables scale efficiencies. A large customer base allows these companies to attract a large supplier base. Consequently, a large supplier base allows them to offer more product variety and favourable deals thus enticing the buyers. A large customer base also contributes towards efficiency of customer-related processes through economies of scale. The *Mature* group also seems to be effective at creating loyalty through personalization programmes and establishing brand image. The high advertising efficiency indicates that retention of existing customers is high. For instance, Amazon (a member of this group) has created a successful system of one-to-one marketing. It's probably the first company to really take advantage of something the internet makes possible. It has invented and implemented a model for interacting with millions of customers, one at a time and still retaining a personal touch. Also, Amazon has built its own warehouses and has developed a specialized logistical, order fulfilment, and product return system that is in line with objectives of excellence in customer service. Furthermore, although not explicitly tested in this study, it seems that some of the alliances reflected in the *Mature* category (e.g. Barnes and Noble; Staples) try to take advantage of synergies between the information and search capabilities of the internet, and the physical warehousing, retail and distribution infrastructure. These initiatives reflect a long-term orientation (long-term risk) and a 'differentiation' strategy that manifests itself in higher margins (cost efficiency).

In contrasting *Risky* with the *Mature* groups, we can see that firms in the *Risky* group seems to pursue a cost-oriented approach. The *Risky* group tends to utilize internet as a lower cost channel and undertake short-term projects. A nice example here is the contrast between Amazon (*Mature*) and Egghead (*Risky*). Egghead completely shifted to the internet channel mainly to counter high obsolescence of inventory and excessive price competition. Amazon, however, grew as an internet firm and built its resources from its unique historical condition (Barney, 1991). Now its personalized emailing system put it in a position where it can potentially generate more revenue through lower spending and take advantage of its streamlined efficient pro-

cesses, while Egghead still needs to inject funds into reducing operating costs, raising margins, advertising, sales and marketing to boost revenues.<sup>5</sup>

Egghead slashed its sales and marketing expenditure 65% from the fourth quarter of 1999 and its revenues dropped by 14.7% in the following quarter. However, research has revealed that the decreased spending on advertising and sales and marketing expenses doesn't have a uniform effect across all e-tailers. One probable reason is when a brand is fairly established such decreased spending does not dramatically affect revenues (Gilbert, 2000). Firms in the *Mature* group such as Yahoo and Amazon are among the top 100 brands in the world, while companies in the *Risky* group are still searching for brand identity. This gives the *Mature* group more options to experiment with new business models. For instance, Ebay.com has been experimenting with other forms of electronic commerce model besides auctions. The new service Ebay stores will give sellers to set up 'store fronts' that list items that buyers can purchase immediately for a fixed price (Wingfield, 2001). The *Risky* group cannot afford to do this, given their high short-term risk position and low slack resources. Investments that do not yield short-term results in both margins and revenues could push these companies rapidly into insolvency.

*Moderate* and *Novice* groups are faced with the downside of scale effects. Their challenge is to invest copiously in innovation and customer acquisition in order to generate revenue growth. However, the *Novice* group in particular has to be cognizant of short-term risk as they rely on short-term liabilities to fulfil their resource needs. Travelocity (*Moderate*) supported by Sabre Inc. and Expedia (*Novice*) backed by Microsoft have been in dead competition with each other. Both companies have extensively spent money on advertising. In 2000 both companies allocated \$50 million for media campaigns. Both companies have also extensively spent money on enhancing the value of the website. They have added new features at the front end. The back-end systems have been transformed to offer more comprehensive travel combinations. In a recent move Travelocity has incorporated speech recognition system to enhance customer response time. The long-term prognosis of these orientations is difficult to predict. Economic downturn or failed innovation could rapidly pull these firms into a downward spiral, subsequently limiting their ability to generate funds to absorb the financial impact.

In contrasting the relatively successful *Mature* group with the other three groups, it can be observed that firms in the *Mature* group have a significantly longer history (Table 3c) allowing them to accrue resources from unique historical conditions (Barney, 1991). A firm's ability to acquire and exploit resources depends upon their place in time and space. Once this time passes, firms that do not have the space- and time-dependent resources can't obtain them. A similar picture is quite evident in electronic commerce. The period from 1996 to early 1999 may never be repeated again. Companies in this era had ample access to capital and high media coverage to build brand image. Significant slack resources were available to do experimentation and improve infrastructure and business processes to fulfil customer needs. While many companies failed, today's 'successful' firms tend to have the longest average life.

The results and discussion raises three important issues in the context of internet-based businesses. The first issue is *scale effects*. Putting together the infrastructure for an online

<sup>5</sup>After this study was completed, Egghead filed for Chapter 11 bankruptcy.

business requires considerable initial investment. However, the ability to scale up from the initial infrastructure is high. That is the reason why customer base is so important for internet-based businesses. A large customer base allows companies to be cost efficient because of economies of scale. On the other hand, it may also reduce the need to expend excessively on attracting new customers. This ultimately reflects in the marketing intensity and operational efficiency orientation of relatively successful firms. The second issue is *learning effects*. Internet-based business requires at least 3 years to adapt its systems and operations to fulfil customer needs (Poole, 2001). This suggests that firms may have to go through a learning curve and within this time frame considerable slack resources may be needed to fund projects. These projects may be focused on reconfiguring the website and operational processes to be responsive to the needs of the customer. Thus, successful firms are better able to manage the complex interactions in taking long-term structural risk by allocating resources to adaptation initiatives, while maintaining liquidity to support day-to-day operations. The third issue is *customer service*. Analysis suggests that successful companies have been able to use internet to provide customers with better services. Value-added services that exploit the unique characteristics of the internet enable internet-based businesses to offer a better value proposition to their customers. Internet-enabled customer services form the core of differentiation strategy that is structured around augmenting customer value. Excellence in customer service allows internet-based businesses to build and retain a loyal customer base and extract extra margins leading to more favourable cost structures.

The strategic groups and their interpretation in light of the three characteristics above are summarized in Table 5.

## CONCLUSION

With the recent implosion of many e-commerce companies, it is important to engage in introspection of these failures in order to gain insight and guidance. In this study, we sought to go beyond expository assessments and tried to focus on stronger and higher level conceptualizations of the business model. Drawing on the concept of strategic orientation that has a strong foundation in strategy literature, we examined over 100 internet-based businesses for the relationship between strategic orientation and performance. From the results, it is apparent that e-commerce requires a multifaceted orientation, and overemphasis on one attribute could lead to imbalance in other attributes. For instance, spending cash on customer acquisition could lead to short-term liquidity problems or reduced cash investment for R&D innovation. These choices are not easy, as companies try to thrive and learn in this new environment. However, as this research suggests, there are models of success, most of which have turned profitable subsequent to the collection of this data.

While this work offers insight into e-commerce success, further work along these lines is required in order to generate stronger prescriptive implications. Future research can use more granular and diverse metrics for strategic dimensions; conduct sensitivity analysis to assess trade-offs between these dimensions; use richer conceptualization of firm performance; and

Table 5. Summary of results

	Strategic group characteristics	Scale, learning and customer service	Prognosis
Mature (Best performers)	Large firms with streamlined processes and high levels of operational efficiency, that can capitalize on differentiation and brand equity.	Benefit from strong scale effects, learning effects and superior customer service, all made easier through strong brand equity.	Can afford to innovate and might thrive with newer means such as synergy with physical infrastructure and innovative loyalty programmes.
Risky (Worst performers)	Firms that use the internet as a low cost channel, have relatively poorer cost structures and tend to be in a position of high short-term financial risk.	Benefit from some scale effects but do not invest in learning. Low margins, high short-term risk and low brand equity preclude them from capitalizing on operational and marketing efficiencies.	Severe liquidity issues make short-term survival a problem.
Moderate (Average performers)	Relatively smaller firms with low operational and marketing efficiency. Typically undertake aggressive spending to draw in customers.	Low brand equity, scale effects and limited ability to invest in learning. Customer service not provided within an efficient cost structure.	On cusp of either a positive or negative spiral depending on their success in aggressive customer acquisition and innovation.
Novice (Average performers)	The smallest firms – aggressive in attracting customers and innovation, while incurring some short-term risk.	Low brand equity, scale effects and limited ability to invest in learning. Customer service not provided within an efficient cost structure.	Lack of scale effects makes it critical to invest in innovation that sells to break away from the pack.

employ alternative methods for capturing strategic orientation. As internet-based businesses traverse the current discontinuity, such work is an important catalyst that can provide guidance on the success of these important enterprises.

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## Biographies

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### Appendix Prominent companies in the clusters

Clusters	Companies
Cluster 1 (Moderate)	1. Ashord.com
	2. Bluefly.com
	3. Ebookers.com
	4. Fashionmall.com
	5. Peapod.com
	6. PlantRx.com
	7. Tavelocity.com
	8. E*Trade.com
	9. WebMD.com
	10. Ameritrade.com
	11. AskJeeves.com
	12. Goto.com
Cluster 2 (Mature)	1. Ebay.com
	2. Amazon.com
	3. Yahoo.com
	4. Barnes & Noble.com
	5. Staples.com
Cluster 3 (Risky)	1. Egghead.com
	2. Priceline.com
	3. Stamps.com
	4. Buy.com
	5. Euniverse.com
	6. Onvia.com
Cluster 4 (Novice)	1. Drugstore.com
	2. Expedia.com
	3. Tickets.com
	4. Webvan.com
	5. Hotjobs.com
	6. DoubleClick.com
	7. Smarterkids.com
	8. Ivillage.com