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Perceived Competitive Influences and Innovative Behavior: An Exploratory Study

Kjell Grønhaug
Perceived Competitive Influences and Innovative Behavior: An Exploratory Study

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Abstract

This article explores how firms' perceptions of competitive influences guide and direct innovative behavior in their pursuits of strategic advantages. Findings from an exploratory study demonstrate that firms direct their attention towards a limited number of competitors, that the perceived competitive position differ highly from the position as described by "objective" measures, that "programs" held by the firms direct resource allocations to innovative activities and responses to meet competitive threats. Theoretical and managerial implications are highlighted.
INTRODUCTION

The purpose of this article is to explore firms' perceptions of competitive influences and how such perceptions guide and direct innovative behavior in their pursuit of strategic advantages. Every firm competing in an industry has a competitive strategy, whether explicit or implicit (Porter 1980, p. xiii). The quest for an explicit strategy implies believing in that strategy counts, and that strategic skills really make a difference. As noted by Mintzberg (1978), however, there may be a substantial difference between the intended and the realized strategy due to factors such as unforeseen events and factors moderating the various decisions to be made when implementing the strategy formulated.

STRATEGY AND COMPETITION

The basic idea behind strategic management is that a firm needs to match its capabilities to its ever-changing environment if it is to obtain its best performance (cf. Teece 1985). Performance is related to sustainable advantages obtained by the firm allowing for profit (Porter 1985). Buyers (actual and potential) and competitors are crucial elements in the firm's environment (cf. Thompson 1967). Firms direct their efforts towards satisfying specific buyers needs. The ability to satisfy buyers' needs is the firm's reason for being and this ability is closely related to the products and services offered. Kotler's (1984) definition of a product as "a need satisfier" (p. 5) highlights the product-buyer need relationship. The firm, however, is confronted with competitors serving partly the same customers.
Competitive influences have to be taken into account in order to prosper and stay in business. ¹

The firm's choice of products and buyer groups determines its mission and competition as well. By changing its mission(s), the firm will also change the competitive situation under which it operates. The small, mechanical firm moving into high-tech will meet new buyer requirements and competitive forces different from its former low-tech mission experiences.

STRATEGY AND ORGANIZATIONAL COGNITION

Organizational theorists have emphasized that the "environments are not given realities, but created through a process of attention and interpretation" (cf. Pfeffer & Salancik 1978, p. 13). Weick (1969) also contends that the "human actor does not react to an environment, he enacts it" (p. 64). This also applies to the part of the firm's environment constituted by its buyers and competitors. Thus the firm will act according to buyers needs and competitive influences as perceived. In a recent study, Gripsrud & Grønhaug (1985) found that retailing firms only perceived a modest fraction of all stores (in a conventionally defined market area) as competitors. Their perceptions were biased towards larger stores, and heavily influenced the firms' choice of strategy. Pfeffer & Salancik (1978) assert that factors such as organizational structure, structure of the information system, and activities conducted by the firm are important determinants in the enactment process (p. 74), here assumed to influence firms' perceptions of competition, buyer needs, and the strategic actions to be taken.
The firm may pursue competitive advantages in various ways, such as emphasizing low costs, or designing products for selected groups of buyers (as reflected in the various generic strategies proposed by Porter (1980)). Here it is believed that when the firm is operating in a differentiated market, it will emphasize innovative activities to differentiate its products from or match its products to the offerings from its competitors. Such strategic behaviors are easily observed among producers of cars, computers and soft drinks.

Firms develop rules and procedures to cope with various tasks (March & Simon 1958). Such rules and procedures will not only structure and direct organizational activities, but also attention (cf. March 1981). This may impact future actions in kind. In a recent provocative article, Starbuck (1983) contends that organizational rules, procedures and programs function as "action generators." Such programs will likely influence perception of competitive forces and guide strategic actions. Programs held by the firm tend to be rather stable. When the linkage between action and effect is ambiguous, they will to be repeated. Such actions may be repeated even though they are inadequate due to ambiguous feedback (March & Olsen 1976). In fragmented industry (e.g., industries in which "no firm has a significant market share and can strongly influence the industry outcome" (Porter 1980, p. 191)), in particular in an industry consisting of many small firms, with the final buyers separated from the firms by intermediaries, it is believed that such programs will be stable and biased due to lack of direct responses from buyers to guide and
correct the firm's actions. This point is to its extreme highlighted by Levitt (1960) in his seminal article "Marketing Myopia".

Strategic actions are costly. Here it is believed that firms will allocate resources to activities perceived as important (even though the allocation of limited resources may have to be negotiated between members holding different views regarding the importance of the various activities and how they should be done). Responses to competitive threats will be determined by perceptions of competitive positions and the content of the programs evoked by competitive threats (cf. March & Simon 1958). In sum, firms' cognitions of buyers, competitors and own competitive position, and the programs held are assumed to be of great importance for the strategic actions taken. For a review of cognitive processes in organizations see Weick (1979).

METHOD

A small-scale study was conducted to explore the various factors emphasized above, e.g.,

- innovative activities when operating in a highly fragmented and differentiated market;
- cognition of competitive influences and competitive position;
- allocation of resources to strategic activities perceived important;
- programs for handling competitive threats.

Thus the preceding theory-based discussion serves the purpose of guiding and directing the gathering and interpretation of data.

Design

In-depth cases based on several sources of information were found appropriate for the present research purpose. 2 The present study was
restricted to one, highly fragmented industry (textiles, outer garments) consisting of approximately 400 small- and medium-sized firms selling more than 80% of their products in the domestic market (Norway). Imports exceed exports. Most firms offer a wide range of products marketed through conventional distribution channels at the domestic market. A rather high fraction (approximately 50 percent) is enjoying some exports. Integration (vertical and horizontal) and tight cooperative actions are rare.

This study was restricted to include all firms within the industry in one region (Bergen, the second largest city in the country). The reasons for this choice were rooted in economic constraints and the need for detailed examination of each firm. The Central Bureau of Statistics of Norway submitted a list of all the firms within the industry in the region. Small firms (e.g., five or less employees) and diversified firms involved in several industries were deleted from the list, resulting in a homogeneous "population" of 12 firms all belonging to the same four digit SIC-category.

Data

Initial contact was established with the firms and all, but two firms agreed to participate. Semi-structured interviews were conducted with top-management and other persons involved in innovative and strategic activities. In most cases the first interview was conducted with the top-manager. Snowball interviewing was done to trace important persons involved. Few problems were experienced in obtaining names of the other persons involved. Moreover, when questioning about emphasis on innovation, competition and competitive reactions, a high degree
of consistency was found in the responses from the various organization members, indicating substantial internal agreements regarding such tasks. Secondary data (price lists, brochures and annual reports) were also gathered. Together the primary and secondary data provided useful information about assortments offered, innovative tasks, competitive influences, market shares, allocation of resources to innovative and strategic actions and the handling of competitive threats. Summary of the various measures to be reported on is shown in Appendix A.

FINDINGS

Below are reported the major findings:

(1) The firms studied all had hierarchical, functional organizational structures. They were found to vary considerably in size as measured by sales and number of employees (50-800). A very high correlation coefficient, $r=.98$ ($p<.001$) was found between the two size measures. All firms were using the same method of price calculation (e.g., cost plus overhead), and the budgeted overhead percentage was approximately the same across firms. The industry is very labor-intensive. Wages are negotiated by the labor union and the association of employees, indicating very uniform labor costs.

The very high correlation coefficient between sales and employees indicates modest variations in the sales/employee-ratio across the firms (which also was found to be the case when calculating this ratio for each firm). The almost constant sales/employee-ratio across firms together with information about the price-calculating procedures applied may indicate absence of economies of scale.
(2) Great variations in the assortments offered were observed, ranging from 30 to 2,500 product variants (e.g., listed as separate items in price lists). Number of items per product line was found to vary from 15 to 250. The concept "product group" or "product line" was found to be used in different ways across firms. Thus no standard terminology seems to exist, not even within these firms belonging to the same four-digit SIC-category. This, however, is not a new problem, (cf. Needham 1975 for further discussion). No relationship between firm size and number of variants offered was observed, while a positive correlation coefficient was found between size and number of product lines (r=.70, p<.10), implying that the all-over growth strategy within this industry is to expand the width (and not the depth) of the assortment.

(3) A variety of R&D-activities were conducted in all the ten firms studied. None of the firms had a specific account for the R&D-expenditures. By estimating the costs of the various activities involved (e.g., manpower, fraction of overheads, etc.), the R&D-expenditures were found to vary from one to three percent of total sales. The R&D-activities (and thus the R&D-expenditures) were mainly related to product development and product modifications. The estimated relative R&D-expenditures (%) was found unrelated to firm size.

(4) Six of the 10 firms had a separate R&D-department. Only modest overlap between the presence of a separate R&D-department and size was found (r=.22, n.s.). In firms without a separate R&D-department, other members were found assigned to such tasks. Table 1 shows top-management involvement in R&D-activities as measured in percentage of working time.
Inspection of Table 1 reveals that top-management in the firms studied devotes time and attention to R&D-tasks, indicating that such activities are considered important. A negative correlation was found between firm size and top-management involvement ($r_s = -.40$, n.s.). This may indicate that managers in small firms have fewer skilled collaborators compared to their colleagues in larger firms, and thus they have to be involved more.

(5) The firms' perceived competitive positions were assessed by their perceived market shares. Market share is related to the fraction of buyers' covered, and may serve as a measure for assessing the firms competitive position compared to its competitors. (The firms were also asked about the estimated market shares of their closest competitors.) Below are reported perceived market shares and estimated market shares based on firm and industry sales.

The findings are interesting in several ways. Table 2 reflects great discrepancies between perceived and estimated market shares. Moreover, the correlation between the two estimates was found close to zero. These discrepancies indicate that firms perceive and define their competitive positions differently from inferences based on "objective" data. The by far higher subjective market shares indicate that firms are using more narrow definitions of competition compared to what is captured by the four digit SIC-classification. Three of the firms were unwilling to submit information about market shares due to uncertainty. It should be noted that none of the firms studied had
gathered information about consumer preferences for the various products offered\(^3\) neither made any real estimate of market size.

(6) The perceived importance of product development (R&D) was assessed by letting the firms rank order four aspects found of importance for their competitiveness (e.g., product development, tight cost control, good management, and marketing). Table 3 reports on the obtained rank-scores for product development.

[Table 3 about here]

The findings demonstrate that product development is perceived being of crucial importance for the firms' ability to compete and succeed.

(7) The firms were also asked to assess their present needs for innovation on a scale ranging from "5-very high to 1-almost no need for innovation." Four of the 10 firms reported "very high" or "high need for innovation," while the remaining six firms varied from "almost no need" to "a certain need" for innovation. When relating the perceived importance of product development to perceived need for innovation, a high, positive correlation coefficient was found \((r_s = .63, p<.20)\). This may indicate that when a specific need is perceived important also the task as such tend to be perceived important. (Due to the cross-sectional design inferences about causal relationships should be done with the outmost care).

(8) When relating firm size, R&D-department, need for innovation and top-management involvement, the following picture emerges:

[Figure 1 about here]
The findings, summarized in Figure 1 may be interpreted in the following way: Size as such is not related to need for innovations. The positive correlation coefficient between size and R&D-department does indicate (within this technology) a somewhat higher degree of division of labor with increasing size; while the negative correlation coefficient between size and management involvement indicates that top-management has fewer collaborators in small compared to large firms to handle this important task. The high positive correlation coefficients between need for innovation and top-management involvement, and between top-management involvement and R&D-department can be subject to the following very speculative interpretation: When need for innovation is evoked, top-management (e.g., the persons possessing the most powerful positions within the firm) is or will be involved because of the perceived importance of the task. Either way, when top-managers are involved and perceive something as being very important, they give it attention, allocate resources, and may even change the organizational structure (and thus the positive correlation coefficient between top-management involvement and R&D-department).

(9) The firms studied were also asked to submit names of their most important competitors. All the firms submitted one to three names of domestic firms, in most cases located outside the area covered in the present study. The reported firms were all larger firms. This finding indicate that firms tend to direct their attention towards a limited number of larger competitors (as reported by Gripsrud & Gronhaug 1985). Moreover, examination of the perceived competitor(s) also demonstrate
that their product offerings are very similar to that of the reporting firm as proposed recently by Porac et al. (1985).

They were also asked to assess the degree to which competitive moves (e.g., introduction of new products) were important for their innovative behavior (on a five-point scale ranging from "5=very important to 1=not important/no influence"). Nine of the ten firms reported competitive influences to be "very important" or "important" for their innovative behavior.

The answers on the question how they reacted to competitive moves (e.g., introduction of new product(s)) are summarized in Table 4.

Table 4 indicates that eight of the 10 firms hold similar response-programs, e.g., adapt to the competitor's move. One of the firms is "not sure" while another firm does not believe in such moves, and perceives itself as being in a leading, first move position.

Moreover, the eight firms holding the same adapt-script are defining their competitive position as operating in a differentiated oligopoly and not being in the number one position. These firms constitute a very coherent strategic group. According to the strategic dimensions described by Porter (1980, p. 127-8), also the firm defining its strategic position differently (#5) and the one answering "not sure" (#4) belong to the same strategic group.
DISCUSSION

The findings reported above deserve some further comments:

(1) According to Porter (1980), product differentiation involves "...brand identification and customer loyalties" (p. 9). In the present case one may contend that the firms are trying to differentiate their products. The resultant product differentiation of the intended strategy may, however, be questioned.

(2) At the outset of this paper it was assumed that firms operating in differentiated markets emphasize product development (innovation), and direct their attention and resources towards such tasks. The reported findings strongly support this assumption.

(3) Because product development is considered such an important when operating in differentiated markets, firms also tend to direct their attention towards the products offered by their competitors. This leads to the following proposition:

Pl: When the product itself is perceived as a crucial element in the firm's competitive strategy, it (the firm) tends to watch the products offerings from its perceived competitors.

This proposition may be generalized to: the firm will in particular watch dimensions perceived as salient to their strategy. Findings reported by White (1981) who observed that firms in oligopolic, industrial markets, were continuously watching each other and mutually adapting their strategic behavior, strongly support the stated proposition.
(4) Firms construct their environments, and subjectively define their competitive positions.

P2. The competitive position as perceived by the firm may differ from the position as defined by objective measures. Perceived competitive positions may be more or less biased. Factors such as number and size of competitors, distance from their ultimate buyers, as well as the organizational structure, information system and activities (Pfeffer & Salancik 1978, p. 74) are assumed to influence such perceptions. Still, however, little is known how firms define competition (see Porac, et al. 1986). The perception of a few competitors only may suggest that firms' definitions of competitors are based on few attributes perceived as salient.

(5) Firms develop programs to cope with their various tasks. Such programs guide and direct behavior.

P3. In a given perceived competitive situation the firms tend to act according to the program(s) hold and being evoked.

P4. When confronted with competitive threats, the firm will allocate resources according to the evoked program(s) (within the constraints perceived to be present by the firm).

Programs and repetitive actions also direct attention and perceptions, which will structure and direct future behavior (cf. Mintzberg et al 1979).

(6) Firms may hold similar or different programs to cope with situations perceived as being equal (developed through watching and imitation), and thus:
P5. Firms holding similar programs tend to react in the same way when facing similar competitive threats.

The reported findings are all in concordance with the general theoretical aspects emphasized at the outset of the article. This indicates the usefulness of theory in directing the attention towards specific dimensions and the structuring of the problem under scrutiny. In addition it also demonstrates that also exploratory research can benefit from theory, even at the outset of the project, as assumed for more structured research designs.

Managerial Implications

The presented findings do also have managerial implications.

First, the literature on management and strategy is rich in concepts and models emphasizing normative advice. Findings as reported here may enrich the models used and contribute to improved practice, by emphasizing factors overlooked, but of importance for the firm's strategic behavior.

Second, the importance of programs indicates that by knowing their competitors' programs, firms may predict the reactions of their competitors. Such programs, however, are partly unique to the firm, which emphasizes the need for tracing the programs of the most salient competitors.

Third, the firm's perceptions of competitive positions, competitors and buyers, may be more or less biased. Delayed and ambiguous feedback will distort learning and adequate competitive behavior (cf. March & Olsen 1976). An intuitive suggestion is that the various assumptions underlying the firm's perceptions (models) of competitors and buyers
should be made explicit and confronted with evidence (cf. Zaltman et al 1982).

Fourth, such perceptions tend to be more biased when the competitive situation is ambiguous and the visibility of the final buyers low, such as when distributing through intermediaries. Such factors should be seriously considered and adequate system should be designed to improve the access to relevant information of importance for correcting models/perspectives held by the firm, and thus improve its strategic actions.

In sum, efforts should be made to bridge theory, observations and practice.
The focus on profit in the management literature, the emphasis on resources in the resource-dependence perspective (Pfeffer & Salancik 1978) and on the surviving firm in the natural selection model (cf. Aldrich 1979) implies that the firm has to cover cost and that excess profit is desirable.

Intensive, small-sample studies have proven valuable to explore and develop theory in several disciplines such as organizational decision-making (Cyert et al 1956), innovations theory (Burns and Stalker 1961), and strategic management (cf. Mintzberg 1978).

Competition can be measured as degree of substitutability (cf. the use of cross-elasticities in economics). See Day et al (1979) for relevant procedures.

The procedure of "strategic sampling" as proposed by Glaser and Strauss (1967) when building theories from observations, and Campbell's (1975) quest for "degrees of freedom" in case studies are in accordance with this point of view.
REFERENCES


Campbell, D. T. (1975), "'Degrees of Freedom' and the Case Study," Comparative Political Studies, Vol. 8, No. 2 (July), 178-93.


Table 1. Top-management Involvement in R&D-activities (% of working time)

<table>
<thead>
<tr>
<th>R&amp;D Involvement</th>
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<tr>
<td>&lt; 5%</td>
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</tr>
<tr>
<td>5-10%</td>
<td>2</td>
</tr>
<tr>
<td>11-15%</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 15%</td>
<td>5</td>
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<tr>
<td>Total</td>
<td>10</td>
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Table 2. Perceived and Estimated Market Shares

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<th>Estimated Market Shares</th>
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<td>1-5%</td>
</tr>
<tr>
<td>Total</td>
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<td></td>
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Table 3. Perceived Importance of Product Development

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<td>6</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<td>4</td>
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Table 4. Reactions to Competitive Move

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<th>Size (empl.)</th>
<th>Reaction</th>
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<tbody>
<tr>
<td>1</td>
<td>360</td>
<td>Must adapt</td>
</tr>
<tr>
<td>2</td>
<td>260</td>
<td>Must follow</td>
</tr>
<tr>
<td>3</td>
<td>235</td>
<td>Must follow</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
<td>? Not sure</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>Afraid of being copied</td>
</tr>
<tr>
<td>6</td>
<td>75</td>
<td>Must react simultaneously</td>
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<td>7</td>
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<td>800</td>
<td>Must adapt</td>
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<tr>
<td>10</td>
<td>137</td>
<td>Must adapt</td>
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</table>
Figure 1. Size, Need for Innovation, R&D-dept., and Top-mgmt. Involvement
Appendix A: Measurements

Variable:

1. **Size**: (1) Sales (NOK) (annual reports)  
   (2) Employees (annual reports)

2. **Management**: "Who constitute the firm's management?"  
   (titles/positions)

3. **Products**: (1) Product lines (price list)  
   (2) Product items

4. **R&D-organization and activities**:  
   (1) "Does the firm have a separate R&D-department?"  
   If "yes." "Who is/are employed in this department"  
   (2) If "no." Does the firm conduct any R&D-activities? (R&D was explained, and also allowed to include minor product changes)  
   If "yes." "Who is/are involved? (titles/positions)  
   (3) For managers involved: "Approximately what percentage of your working time do you spend on R&D-activities?"

5. **Market share(s)**:  
   (1) Perceived. "What is/are the market share(s) for your product(s) at the domestic market?"  
   (2) "Objective." (Company's domestic sales x 100) / (value of domestic production - exports + imports).

6. **Importance of R&D-activities**: "Please rank the importance of (product development, tight cost control, good management, good marketing) for the competitiveness of your firm (1=most, ..., 4=last important)."

7. **Need for innovation**: "Indicate the firm's present need for innovation"  
   (5=very high, ..., 1=almost no need for innovation)

8. **Competitors**: "Please list your most competitors" (name, location)
9. Competitive influences: "Indicate how important introduction of new products from your competitors is for your innovative activities (R&D)" (4=very important, ..., 1=almost not important)

10. Competitive reaction: (1) Past behavior. "What does the firm do when the competitor(s) introduce(s) new products?"
(2) Future behavior. "What will the firm do if one of your competitors introduces a new product?"