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**STRATEGY BASED SEGMENTATION
OF INDUSTRIAL MARKETS**

Theo M.M. Verhallen, Ruud T. Frambach and Jaideep Prabhu

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Teaser: Strategic Orientation Outperforms Traditional Segmentation Criteria

Breakout #1. Industrial market segmentation is currently primarily based on geographics and demographics. (Introduction, page 5)

Breakout #2. The strategic orientation of firms directly influences their buying behavior. (Industrial Market Segmentation, page 6)

Breakout #3. Firms' strategic orientations relate to production, marketing, human resources, R&D and finance. (Strategy as a Basis for Segmentation: Strategic orientation, page 9)

Breakout #4. A Firm's strategy is a better predictor of adoption. (Results: Strategic type and industrial buying behavior, page 12)

Breakout #5. Strategy based segmentation ensures more market oriented targeting and positioning. (Discussions and Conclusions: Managerial Issues, page 15)

Abstract

Segmentation of industrial markets is typically based on observable characteristics of firms such as their location and size. However, such variables have been found to be poor predictors of industrial buying behavior. To improve the effectiveness and power of existing approaches to industrial market segmentation, we propose using unobservable characteristics such as organizational strategy in addition to the observable characteristics currently employed. An important justification for our approach is that a firm's strategy influences its behavior, especially its buying behavior; as a result, adding the strategic type and orientation of firms to a segmentation scheme is bound to improve the effectiveness of the scheme. To test the effectiveness of our approach we conducted an empirical study of the purchase of car phones by over 200 Dutch firms. The results support our predictions. In fact, they indicate that a firm's strategy is an even more important determinant of industrial buying behavior than the variables currently employed. Thus, strategy based segmentation may be a more powerful and effective approach to industrial segmentation than current approaches.

INTRODUCTION

The segmentation of consumer markets has received considerably more attention in the literature than the segmentation of industrial markets. According to Bonoma and Shapiro [1] "a careful search of the literature shows that only a few articles have had any direct, important impact upon the development of industrial market segmentation" (p. 4). Consequently, industrial market segmentation is currently primarily based on geographics and demographics [2, 3]. However, this leaves industrial suppliers unsatisfied, for segmentation of the market into homogeneous groups with regard to buying behavior has proved to be very difficult based on these criteria. Therefore, Laughlin and Taylor [4] point out that there is a strong need for a managerial approach in industrial market segmentation. In consumer markets homogeneous segments have been defined on the basis of consumer characteristics such as personality type and psychographics in order to explain differences in buying behavior [5]. Analogous to this, similar characteristics of firms have been employed in order to explain organizational buying behavior.

Robertson and Wind [6] argue for the use of organizational psychographics to study the innovation buying behavior of firms. Strategic orientation could well be such an organizational psychographic, parallel to personality values in consumer segmentation. In industrial markets, the products and services bought by firms are related to their objectives and strategies [7]. If industrial buying behavior is primarily driven by the strategy pursued by the buying organization, then knowledge of these strategies could provide a valid basis for segmenting the market into relatively homogeneous groups. It is the objective of this paper, therefore, to explore the extent to which the strategic type and orientation of firms relate to their industrial buying behavior and as a consequence contribute to the effective segmentation of industrial markets.

INDUSTRIAL MARKET SEGMENTATION

Selection of segmentation variables typically includes such conditions as measurability, substantiality, accessibility, and actionability [8]. Often, a trade off between the costs and applicability of the segmentation basis is made. As Bonoma and Shapiro [1] point out: "...Management often faces segmentation tension between the theoretically desirable and the managerially possible..." (p. 258). Segments based on demographics of buyer firms, for example, are usually more easy to identify than segments based on needs and benefit segmentation.

Cognizant of this, Bonoma and Shapiro [1] propose general guidelines for segmenting industrial markets following a nested approach. Specifically, they distinguish five general categories of segmentation variables that vary in operational costs and complexity. Ranging from relatively cheap and easy to implement to costly and difficult to implement, they identify the following segmentation variables: (1) demographics, such as firm size and industry, (2) operating variables, (3) purchasing approaches, (4) situational factors, and (5) personal characteristics. These criteria are related to the several levels that Webster and Wind [9] distinguish in their model of industrial buying behavior. Webster and Wind argue that four groups of variables are relevant in the buying process. First, the external environment of a firm determines the context within which industrial buying takes place. Second, buying behavior is influenced directly by factors related to the internal environment: the operating variables of the firm, i.e. technology, structure, tasks and objectives and people. The buying process is driven by the objectives of the firm and limited by available means. Third, the group of people involved in the buying process directly influences the buying decision (decision making unit). Finally, each individual exerts influence on the final decision.

In terms of the Webster and Wind model of industrial buying behavior, the strategy pursued by a firm is one of its most important operating variables. Since the products and services bought by industrial buyers are related to their objectives and needs, their buying behavior will be influenced by these considerations [7]. Further, as strategy is the means by which firms meet these objectives and satisfy these needs, the strategy of firms is bound to directly influence their industrial buying behavior. This makes strategy a potentially valuable basis for segmentation of industrial markets. Following Shapiro and Bonoma, such a basis for segmentation would be favourable in terms of costs and complexity.

STRATEGY AS A BASIS FOR SEGMENTATION

A firm's strategy is influenced by both external, marketplace, as well as internal, organizational, considerations. In the literature both considerations have been used quite extensively to derive typologies of strategic types and orientations of firms.

Strategic types

In general, several typologies of (marketing) strategies have been proposed, viz. Mintzberg [10], Porter [11] and Miles and Snow [12]. The Mintzberg typology is based on the process of strategy formulation within the organization. Mintzberg identifies three different modes of strategy formulation: entrepreneurial, adaptive and planning. Emphasis in this typology is on 'the motives for decisions, who makes them, how alternatives are evaluated, the decisions' horizons, linkages, organizational goals, flexibility of modes, age of organization, and types of environments beneficial to each mode' [13]. The Porter typology concerns a classification of competitive strategies into three generic strategic types: differentiation, cost leadership and focus strategy. Finally, Miles and Snow have empirically identified four different types of strategies: prospector (innovative), defender (efficient), analyzer (efficient and adaptive) and reactor (no consistent strategy). Of these typologies the Mintzberg typology focuses on the process of strategy formulation rather than strategy content and is therefore less relevant to the issue of market segmentation. Comparing the Porter typology with that of Miles and Snow, Segev [14] concluded that the latter has a richer conception of the strategic environment in which firms operate. Consistent with this conclusion we employ the Miles and Snow typology as being the best suited to the objectives of industrial market segmentation.

Strategic orientation

Hofstede *et al.* [15] identify six dimensions of organizational culture or "people's perceptions of the practices in their work unit." These cultural dimensions of firms (normative vs. pragmatic; loose vs. tight control; open vs. closed system; parochial vs. professional; employee vs. job oriented; process vs. results oriented) can be compared with personal values of consumers as they describe 'enduring basic orientations toward actions and a standard for guiding action and for maintaining attitudes toward objects and situations' [16, 17]. Nevertheless, these dimensions are not well suited for segmentation purposes as they are not directly linked to behavior [18]. On the other hand, very specific evaluations and beliefs of actions are not stable enough to form a basis for segmenting markets. For this reason, Van Raaij and Verhallen [5] advocate the use of domain specific values as the most suited basis for market segmentation. Domain specific values consist of a basic orientation within a domain that describes a whole range of actions guided by a

common goal such as vacation, breakfast or work. These domain specific values play a moderating role between general personal values and specific brand evaluations. Davis and Schul [19] examine the moderating role of strategic orientation analogous to the domain specific values in the consumer literature. They argue that strategic orientation moderates between general organizational context variables and specific measures of business unit performance similar to domain specific values in consumer segmentation literature.

With respect to the strategic orientation of the firm, Kohli and Jaworski [20] introduce the market orientation construct. This construct reflects the degree to which a firm is oriented towards getting information from the marketplace and diffusing this information within the firm. A major aspect of market orientation is therefore the firm's orientation toward the customer [21], in contrast to other orientations which may be more internally oriented [22]. In the present study we consider both the customer orientation of the firm (i.e. its focus on customers' needs as in Van Bruggen and Smidts [21]) as well as the firm's internal process orientation (i.e., its focus on internal efficiency, procedures, and task division [22]). Further, Doyle and Hooley [23] distinguish two types of companies: those oriented to long-run market share and those more oriented to short-run profit performance. This short-run orientation in which management is mainly oriented toward financial performance, profit and turnover, is included as the third type of strategic orientation in our study. Despite the intuitive appeal of the marketing concept, Cahill et al. [24] describe two cases of high-technology products that illustrate the dominance of R&D within companies over other orientations. This R&D orientation, in which the firm is mainly focused on product development and new product/service possibilities, also typifies certain companies. Finally a human resources orientation, i.e., a focus on a pleasant working climate and good personal relations, is added to our scheme. Lewandowski and MacKinnon [25] attribute the success of Saturn Corp. of General Motors to an active human resource strategy and a people-focused organization. Also in comparing US with Japanese firms the difference in the human resources orientation of the respective groups is mentioned [26]. By employing these five strategic orientations we cover the main organizational functions: production, marketing, human resources, R&D and finance.

In sum, strategic type and orientation are likely to be highly related since both the nature and the

priority of activities carried out by a firm are likely to reflect its strategic choices [22]. Further, each of these aspects of a firm's strategy is likely to influence its buying behavior and therefore be an important variable in segmenting industrial markets. We now turn to an empirical study conducted to investigate the relationship between strategy and industrial buying behavior and hence the use of strategy as a variable in industrial segmentation.

METHOD

The study focused on the purchase decision of car phones by firms in The Netherlands. There are several reasons why the adoption of car phones is an interesting and suitable context in which to investigate the relationship between strategy and industrial buying behavior. First, car phones are still in the adoption phase of the life cycle; most firms are still in the process of buying car phones for the first time. Thus, studying this purchase decision helps us focus on a newbuy, an important aspect of industrial buying behavior. Additionally, first time buys are a powerful basis on which to discriminate between adopters and non-adopters. Second, car phones are likely to be equally important to firms regardless of the industry in which they operate. Thus, there are unlikely to be any industry specific biases in our sample. Third, both traditional segmentation variables (such as size) as well as the variables proposed in this study (such as strategic type and orientation) are likely to influence the adoption of car phones, thus avoiding a bias towards a particular segmentation basis or scheme.

A disproportional stratified sample was drawn from a data base of 100,000 Dutch profit firms with more than five employees. Non-profit firms were excluded from the sample due to their deviant buying behavior. Stratification variables were type of industry (6 groups) and number of employees (6 groups). An effective sample of 205 firms was obtained, of which 104 respondents purchased one or more car phones and 101 respondents did not. The sample represents a response rate of 32%. Table 1 shows the distribution of respondents over the stratification variables. The sample is not completely representative of the population as relatively large firms are somewhat oversampled. However, since oversampling of large firms took place for both adopters and non-adopters, the results will not be biased.

[Insert Table 1 here]

Data were collected by means of a computer assisted telephone interview (CATI) using a structured questionnaire. Computer assisted interviewing extends the scope of telephone interviewing in terms of number and complexity of questions asked and processed. Interviewers asked for the key decision maker regarding the purchase of car phones [27, 28]. These respondents can be expected to provide the required information, since they are knowledgeable about the adoption decision process [29].

Research variables were measured as follows. Strategic type was measured using the paragraph method in which the respondent classifies the firm based on standard type descriptions (see Snow and Hambrick [30]). The strategic orientation of a firm was also measured using the paragraph method. Respondents were asked to rank their firm for different kinds of orientations based on standard statements. In addition, respondents were asked to score the orientation of their firm relative to others in the industry. Thus, a relative measure of strategic orientation was also obtained. Descriptions of strategic types and strategic orientations are shown in Table 2.

[Insert Table 2 here]

RESULTS

In this section, we first present results of the distribution of firms over strategic types and orientations as well as the relationship between the two. We then turn to the central issue of this paper, namely the use of strategic type and orientation as bases for segmentation.

Strategic type and orientation

Table 3 shows the distribution of the respondents over the strategic types and orientations. Surprisingly, 80% of the respondents indicated that their firms are primarily customer oriented. Asked to what extent their firm is more customer oriented than other firms in the industry, this percentage drops to 67. The high percentage of firms saying that their primary orientation is a customer orientation might be a result of respondents giving the socially acceptable answer. Being customer and market oriented is nowadays considered to be essential in most markets [31]. Based on this, the relative orientation seems to be a more reliable measure of strategic orientation

[32].

[Insert Table 3 here]

To test for a relationship between strategic type and orientation, we used the nonparametric Kruskal-Wallis one-way analysis of variance. First, we tested whether the primary orientation differs for the four strategic types. No significant differences were found ($p=0.558$). Since most respondents classified their organization as primarily customer oriented, this result may be due to the skewness of the measure of orientation. Therefore, we also analyzed whether the relative orientation differs between the various strategic types. It was found that only the relative customer orientation differs significantly between the strategic types ($p<0.05$, $n=105$). Prospectors are most often found to be relatively customer oriented, followed by analyzers, defenders, and reactors respectively. Since prospectors are generally most engaged in seeking new product-market opportunities, followed by analyzers, defenders and reactors, this finding is consistent with expectations.

Strategic type and industrial buying behavior

As pointed before, demographics such as firm size and industry have been found to be potentially useful segmentation variables for industrial markets [33]. It is interesting to investigate whether these variables prove to be useful in segmenting the market for carphones. It is also interesting to investigate how effective these 'traditional' segmentation variables are in comparison with 'psychographic' variables such as strategic type. The relative importance of strategic type, firm size and industry in segmenting the industrial market with respect to the purchase of car phones was investigated by means of an analysis of variance on these variables. Results are reported in Table 4.

[Insert Table 4 here]

The results show that when strategic type, industry and firm size are considered together, strategic type is the only variable ($F=3.76$, $p<0.01$) that distinguishes significantly between firms

that adopt and those that do not adopt car phones. From this we can strongly conclude that the strategy pursued by a firm is a better predictor of adoption behavior than other, more general, demographic variables such as firm size and industry. This finding supports the central idea of our paper, namely that a firm's strategy is a useful segmentation variable in industrial markets.

Strategic orientation and industrial buying behavior

In order to investigate the extent to which the strategic orientation of a firm influences its industrial buying behavior, we tested, for each one of the primary relative orientations, the relationship between the adoption of car phones and the potential segmentation variables strategic type, firm size and strategic orientation. The results are shown in Table 5. The significance of the F-values for separate analyses of variance are reported for each of the relative orientations of the firm, with strategic type, firm size and the specific strategic orientation as independent variables. Since respondents were asked to suggest multiple orientations their firm stresses to a larger extent than others in the industry, estimation of one (simultaneous) analysis of variance with all orientations as independent variables was not possible.

[Insert Table 5 here]

The results reported in Table 5 confirm the findings shown in Table 4. Specifically, the results suggest that strategic type is the main discriminator between adopters and non-adopters of car phones among firms in our sample. Except for the R&D-oriented firms, strategic type is found to be the most important variable in segmenting the market with respect to buying behavior ($p < 0.05$ in all cases). For none of the orientations does firm size discriminate between adopters and non-adopters. Finally, the strategic orientation of the firm only discriminates customer oriented firms from firms with other orientations with respect to the adoption of car phones ($p < 0.05$). Customer oriented firms are more likely to have adopted this innovation than others. This can probably be explained by the fact that telecommunications is one of the means by which customer oriented firms maintain contact with their customers. The fact that customer oriented and R&D oriented firms exhibit different results emphasizes that it is necessary to take into account the strategic orientation of firms in trying to predict purchase behavior.

DISCUSSION AND CONCLUSIONS

Limitations and future research

Using strategy as a basis for segmenting industrial markets is consistent with the plea of several scholars for a more managerial approach to industrial buying research [4]. Based on the findings of our study we conclude that firms' strategic type and orientation are potentially important variables in segmenting industrial markets. Our results indicate that a firm's strategy is an even more important determinant of industrial buying behavior than the variables commonly considered in industrial marketing, i.e., demographic variables such as size and industry. However, several limitations of the present study should also be noted. First, the empirical study focused on the adoption of one particular product, i.e. car phones. The value of strategy based segmentation should be investigated further by considering the industrial purchases of other products as well. In this respect, one could differentiate between products with different levels of perceived influence on the implementation of the firm's strategy. Second, the type of purchase decision considered was a new buy as opposed to a straight or modified rebuy. While rebuys are important purchase contexts for firms, segmentation is most difficult for newbuys because no prior relationships exist on which the supplying firm may base its marketing plans. Thus our study makes a contribution to an important aspect of industrial buying behavior. Third, both strategic type and orientation were measured using the method of self indication by the respondent. Although this type of measurement is commonly used in strategy research, one should be aware of the biases that may occur when respondents feel they must give socially acceptable answers. Subjectivity may be avoided by using the observation method. However, in strategy research this is obviously very difficult. One means of observation of strategic type and orientation of firms would be by content analyzing their strategic marketing plans [32], although this is a rare opportunity in practice. Finally, in this study only a limited relationship between strategic type and orientation on the one hand and between strategic orientation and industrial buying behavior on the other hand were found. Further research should investigate these relationships in greater detail. Perhaps better operationalizations of the relevant concepts may contribute to a better understanding of these relationships.

Managerial Issues

Although strategy based segmentation is a potentially more effective approach than existing approaches, its implementation poses apparently greater problems than the implementation of size or industry based segmentation. Size, location and industry are all observables that can be noted quickly, objectively and unobtrusively. Strategic variables on the other hand are unobservable and their measurement is arguably more costly and time consuming. Further, it could be argued that the strategy pursued by firms is in reality not always clear and, therefore, cannot be easily identified as a segmentation variable. These considerations, however, do not necessarily pose problems to industrial marketers (segmenting firms). Specifically, suppliers of industrial products do not need to gather data on the strategy of firms they wish to segment. They merely need to keep in mind that potential buyers differ in their strategic type and orientation and, as a consequence, are likely to respond in different ways to marketing plans and strategies. For instance, customer oriented firms are likely to respond more enthusiastically to products and services that can be shown to be of value to their own end-users. Indeed, our results suggest that this may explain the success of car phones with customer-oriented buyers. Because car phones provide firms with the opportunity of staying in closer contact with customers, customer-oriented firms are more likely to see the value of such purchases than firms that are more R&D or human resources or financial performance oriented. Thus, a manufacturer of car phones would not need to know which specific firms are customer-oriented but only that: 1) there are such firms in the market; and 2) that they are likely to respond most favorably to appeals that emphasize the importance of car phones to the building and maintaining of relationships with their own consumers. In sum, therefore, while strategic variables influence buying behavior, a detailed knowledge of the specific strategic type and orientation of specific firms is unnecessary since targeted firms will self-select in response to the marketing effects of the supplier firm.

The use of strategy based segmentation has several additional managerial implications. First, it forces the supplier firm to focus more specifically on the kind of buying firm it wishes to target. Such an approach to formulating marketing strategy is more proactive since it explicitly requires the supplier to look for potential customers. The question "who do we want to do business with" prevails over "who do we do business with." As a result the supplier makes more explicit choices regarding market targeting and positioning, choices that could be made to reflect the firm's strategic objectives. Second, a strategy based segmentation approach ensures a more market

oriented targeting of and positioning for customers. It helps the supplier firm to focus more precisely on the customer's needs and, as a consequence, better customize the product offerings to meet these specific needs. Third, knowing the buying firm's strategy provides the supplier with a knowledge of the buying firm's approach to its target markets. Thinking in terms of the customer's strategy automatically enables the supplier firm to think in terms of the customer's customers, a critical aspect of success in industrial marketing.

Finally, an understanding of the process by which firms' purchase decisions are made will improve the ability of suppliers to influence these decisions. This research helps to shed light on the process by which a firm's strategic type and orientation influence its buying decisions, in addition to variables such as size, which may be merely correlational indicators of behavior rather than causal influencers. For example, customer-oriented firms, i.e., firms with a strategic commitment to satisfying their customers, are likely to make buying decisions that improve their relationships with customers. These firms are also more likely to be responsive to suppliers' marketing appeals that emphasize the value of such products and/or services to the buying firm's end-consumers. In sum, therefore, employing or considering the strategic type and orientation of industrial buyers is likely to considerably improve the effectiveness of segmenting schemes applied to industrial markets.

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TABLE 1: DISTRIBUTION OF RESPONDENTS OVER STRATIFICATION VARIABLES

IN-DUSTRY SIZE	Manu- factu- ring	Construc- tion & Installati- on	Trade, Hospita- lity & Re- pair	Transport, Warehou- sing & Communi- cations	Finan- cial & Business Services	Other Servi- ces	Total
10-20	13	10	30	5	13	6	77
20-50	13	11	19	4	11	8	66
50-100	6	4	6	3	5	7	31
100-200	4	2	2	2	2	5	17
200-500	1		1	1		3	6
500+	1	2	1	1	2	1	8
total	38	29	59	16	33	30	205

TABLE 2: DESCRIPTION OF STRATEGIC TYPES AND STRATEGIC ORIENTATIONS

Strategic types:

Defenders perform relatively well in a specific product/market-combination and do not seek actively new opportunities outside their business domain

Prospectors are always ahead of competitors due to their innovative behavior and cause changes in the environment

Analyzers often are behind the market leader with differentiated products and services

Reactors tend to wait before reacting to environmental changes

Strategic orientations:

Customer orientation: all employees within the organization are always available for customers

Financial orientation: management is primarily focused on increasing sales and making profits

Internal orientation: there is an emphasis on the internal coordination of departments as well as on procedures and efficiency in the business process

Human relations orientation: the organization emphasizes a pleasant working environment and good personal relations

Research and development orientation: the organization emphasizes technological innovation, product and service development, and rapid reaction to new opportunities

TABLE 3: RELATIVE FREQUENCY OF STRATEGIC TYPE AND STRATEGIC ORIENTATION OF FIRMS IN THE SAMPLE

<u>Strategic type</u>		<u>Strategic orientation</u>		
		First	Relatively	
		Position	Higher	
Prospector	66	Customer	80% (n=202)	67% (n=177)
Analyzer	55	Financial	4% (n=196)	31% (n=155)
Defender	38	Internal Process	4% (n=195)	45% (n=140)
Reactor	26	Human Relations	4% (n=195)	65% (n=158)
None	20	R&D	10% (n=189)	57% (n=138)
Total	205			

TABLE 4: ANALYSIS OF VARIANCE ON SEGMENTATION VARIABLES (Dependent Variable: Purchase Behavior)

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square Error	F	Significance of F
Main Effects	6.453	10	.645	2.829	.003
Strategic Type	2.563	3	.854	3.746	.012
Firm Size	1.364	3	.455	1.993	.117
Industry	1.523	4	.381	1.669	.159
Explained	6.453	10	.645	2.829	.003
Residual	39.687	174	.228		
Total	46.141	184	.251		

TABLE 5: ANALYSES OF VARIANCE ON SEGMENTATION VARIABLES FOR DIFFERENT ORIENTATIONS (Dependent Variable: Purchase Behavior)

Relative Strategic Orientation	<u>Segmentation Variables</u>				
	Main Effects	Strategic type	Firm Size	Strategic Orientation	Sample Size
Client	.006 ^{***}	.066 [*]	.188	.051 [*]	158
Financial	.032 ^{**}	.037 ^{**}	.139	.537	143
Internal Process	.054 [*]	.030 ^{**}	.218	.530	128
Human Relations	.031 ^{**}	.031 ^{**}	.286	.161	143
R&D	.091 [*]	.118	.188	.492	128

(The values indicated in the Table represent the significances of the F values)

- * p<0.10
- ** p<0.05
- *** p<0.01