

The relationship of product development and marketing in industrial segmentation

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Abstract

Industrial segmentation has gained increasing attention in recent years. However contributions regarding the reasons and needs behind the segmentation and how this affects the segmentation process have been limited. This paper sees segmentation as a whole, not just as something linked to the market, but linked to the entire organization and the tasks to be performed. There is looked at segmentation from an internal perspective and identifies different situations that create different demands to segmentation. The paper groups the different purposes for segmentation depending on situation. In this connection the paper addresses the tension between the different needs of marketing and product development. Central questions within the segmentation theory are discussed before presenting a classification matrix containing four situations that each raises different demands to segmentation. The dimensions in the matrix are strategic and operational level on one dimension and whether the product is considered as existing or yet to be developed on the other dimension. Industrial segmentation theory is discussed in relation to the four situations in the matrix. Finally related implications are discussed.

Keywords: Industrial Segmentation, product development, marketing

Introduction

The number of articles addressing segmentation of industrial markets has been growing. Still there seems to be “tension between the theoretical desirable and the managerial possible”, as Mitchell & Wilson (1998, p. 429) wrote some years ago. The problem still seems to be that practitioners have not moved away from very simple approaches which can be handled as Abratt (1993) demonstrated years ago, and that theory offers a variety of approaches which are quite advanced but which are difficult to handle in practice (Millier, 2000; Dibb & Simkin, 2001).

Many articles about segmentation focus especially on the importance of the customer. The customer is regarded as the basis of the company’s segmentation efforts. However, marketing campaigns are usually only effective if they are targeted at individual customers; marketing campaigns that are too broad or multi-focussed are usually inefficient. Also, the needs of individual customers usually differ, and therefore the customers expect unique and tailor-made solutions. This is a challenge for companies: Firstly because the company has to develop a product/service that precisely satisfies the need of the customer; secondly because the company constantly has to be able to meet the expectations stemming from these tailor-made solutions; and thirdly because these individualised solutions must give the company such a strong competitive position that charging a higher price is legitimate, also in order to match the increased demand for a proper return on the large development costs.

Satisfying customers’ needs by developing individualised products/services contain at least two vital questions: How can customer needs be clearly identified, and how can the development of a product/service match this need? Developing a general and applicable model for defining the exact customer need or even to describe those conditions under which different models or approaches would be the most appropriate have turned out to be very difficult. For example, the often applied “Nested Approach” model is evaluated as follows: “The authors propose no precise rule to decide when we must stop looking for relevant variables. Some criteria (circumstance) are sometimes linked to some others (environment). And moreover, a major problem lies behind the choice of circumstance variables; can we consider for example that some specific circumstances (order urgency, for example) are relevant segmentation criteria?” (Wind in Millier, 2000, p. 148). In other words, it is difficult to identify customer needs efficiently so that an appropriate segmentation of customer needs can take place. This problem does not only affect marketing efforts but it also influences the company’s product development.

The supposition here is that customers prefer the products/services that match their needs as perfectly as possible. However, if the goal is unclear, effective product development becomes difficult. The risk of not matching customers’ needs precisely is great if these needs are not very well-defined because product variations within most industries are very large. Companies try to deal with this dilemma in several ways. For example, the success of a product can be increased by increasing the number of possible ways of using the product, or a number of additional features can be added to the product in the hope that at least some of them will meet the needs of the customer. However, the result is often that the products become too expensive and/or complex which again may result in dissatisfied customers.

The effect of products that have become more complex or expensive than necessary in order to meet customers’ demands becomes quite the opposite than what was intention of the segmentation.

In other words segmentation must be seen as concept with a distinct purpose and the purpose should be to give guidance how to select customers and how to develop solutions which fits the selected customers. The models developed until now are not very good at solving this task.

Central questions within segmentation theory

The market on which a company tries to be active is the starting point of many segmentation models (Wind & Cardozo, 1978; Bonoma & Shapiro, 1984; Griffith & Pol, 1994; Sollner & Reese, 2001). Griffith &

Pol (1994) recommend with reference to Bonoma & Shapiro demographics as a good starting point for segmentation as they write "Much more demographic information is required about targeted business as well as competitors" (p. 40). In particular they recommend: "Data on size of the business (e.g. revenue and number of employees), how long the business has been in existence (i.e., age), number of competitors, proximity to competitors, and characteristics of the organization other than size (e.g., occupational structure and size of management team) can prove valuable in setting and implementing strategy" (p. 40).

From this string of research, two assumptions seem to be clear. Basically, the product seems to be given, as the major challenge for segmentation is targeting the customers. This has then the consequence that there is no explicit input for product development. On the other hand it is clear that when the product is given and when there seems to be no reason for phasing out a product it can be useful to look at demographics for segmentation for marketing purposes.

In addition to this, Sollner & Reese (2001) focus on the importance of competitors' market positions and how this position influences a segment: "Competitive behavior has a significant effect on the substantiality of segments and on their temporal stability" (p. 26) and they add to this "we are convinced that the formation and selection of segments can be improved if we include theoretical aspects of competitor orientation" (p. 35).

Therefore, in the segmentation process, the company has to consider whether segmentation is only about targeting marketing efforts and making adjustments – considering competitors' behaviour – or whether other factors such as strategic considerations and product development should also be included in the segmentation process.

A much debated issue is the buyer and what the buyer wants to purchase (Wind & Cardozo, 1974; Bonoma & Shapiro, 1983; Plank, 1985; Goller et al., 2002). Buyers differ in numerous ways (Webster & Wind, 1972) and this forms the basis for a segmentation of the market. As shown in a number of studies, the easiest collected data on differences among buyers are often the poorest predictors for differences among buyers and vice versa (Cheron & Kleinschmidt, 1985; Freytag & Mols, 2001). As Dibb & Wensley (2002) indicate, the whole idea of segmentation is based on the fact that differences among buyers exist: "Market segmentation is based on the assumptions that customers demonstrate heterogeneous preferences and buying behavior" (p. 231). Likewise it is assumed that the heterogeneity in preferences and buying behaviour is closely connected to the differences among buyers regarding the use of products and user characteristics. Within literature about product development, the question about preferences and the use of products also play a significant role. A problem which has been thoroughly discussed in literature about product development is that customers are not always aware of their preferences let alone have clearly defined preferences. "The customer does not know which chair he prefers until he sees it", one furniture designer said during an interview about the company customers' buying behaviour and the determinants behind it (Freytag & Nielsen, 1990). This makes it difficult to assume ex ante that all customers are aware of their needs, and that it is only a question of identifying these customer needs. On the other hand, many customers in the industrial market do sometimes know exactly as much as the supplier regarding what they need and what they want. Therefore it can be difficult to disconnect the market segmentation process from the production development process. Instead, it may be appropriate to ask whether these two processes are not to be regarded as interlinked.

Thus, another factor regarding the content of a good segmentation method is the buyer himself and what the buyer wishes to purchase. One problem is, however, that the customer's amount of knowledge about what he really wants and needs may range from total ignorance to high awareness. This in turn raises the question about the nature of the business relation with the customer and whether the customer is included in the product development process and how the production development process is linked to the marketing efforts.

The segmentation process is central because it can group customers in a way that makes it possible to target marketing efforts more accurately. This is very crucial since products are often used very differently from one company to the other, and since companies generally differ in their ways of conducting business.

Here, the authors Griffith and Pol add that the underlying but not explicitly formulated assumption in many segmentation models is that the starting point is the product and not the customer. This implies that the product – and not customers' needs – indirectly controls the segmentation process. In addition to this, Michell and Wilson (1998) point out that "a focus on customer needs/benefits might well reduce the complexity of the segmentation process by providing criteria for the classification of product applications and for the prioritization of customer differences." (p. 436).

The nested approach is an example of the difficulty in planning an appropriate segmentation process and, along with this, clarifying which data should be collected. As mentioned previously, the method behind the nested approach seems very simple but the model does not include anything about how to select criteria or how to weight them. It is as if the product is already given and as if it is only a question of fine-tuning the marketing efforts. But what if the product is not given, or what if the company considers developing the next generation of a product line? The nested approach only addresses these issues sporadically.

Thus, the segmentation process itself is the third essential factor or question in order to segment appropriately, and it is a factor which influences the way in which companies act towards their customers. If the satisfaction of customers' needs and wants is to be a central issue, it has to be reflected in the segmentation process, and the process must link the customer side and product development.

Through the years, several journal articles have demonstrated how segmentation models have not really been applied in practice (Abratt, 1990; Hlavacek & Reddy, 1986; Mitchell & Wilson, 1998; Dibb & Simkin, 2001). However, that systems or instructions have not been applied or followed is not something new. Dibb and Simkin (2001) point out three areas that can evoke implementation problems:

Infrastructure barriers

As example of barriers lack of reliable data and the capability of analyzing the data is mentioned among others.

Segmentation process issues

The processes the employees have to follow has to be clear and well-documented to make sure it is followed and at the same time the management should have the capabilities to guide the process.

Implementation barriers

The segmentation process has also to be linked to other systems in the company, the resources made available, communication strings put in hand and competences be present to raise the possible of success.

In accordance with this, Dibb & Wensley (2002) write as a conclusion that there is a "need for a research agenda which develops and applies a more systematic approach to the evaluation of particular segmentation schemes".

The fourth important question to address when segmenting is about implementation. Also here the question should be linked with the particular purpose of segmentation. When segmenting for a given product this should be clear in the implementation process or if the segmentation process is addressing both the marketing effort and product development issues this should be clear.

Companies' market conditions differ. Campbell (1985), Juttner & Wehrli (1994) and Sheth & Sharma (1997), for example, write that supply and demand conditions also influence the competitive situation, in which the company exists, and the marketing parameters that the company can use. Clarke & Freytag (2004) have addressed the question of segmentation under different market conditions and the connection to product development.

An important factor in connection with supply and demand conditions is the question of who takes the initiative. In marketing literature, the underlying assumption is often that the seller is the active part. However, as Blenkhorn and Banting (1991) point out, in many cases it is the customer who sets the agenda.

If the buyer is the active part, he does not necessarily act according to the seller's expectations as expressed in the market segmentation conducted by the seller. Thus, the fifth significant dimension addresses the question: who sets the agenda for the interplay between the parties?

Not only market conditions but also the way that the company is organised internally play a part. Companies differ due to different organisation structures, bonus schemes, communication structures etc. This implies that the segmentation process and segmentation model must be adapted to the individual company's segmentation need. Segmentation is influenced by the company's current situation and by its current needs. In some situations, a company's segmentation may be suitable for addressing the market, and in other situations it will form a good basis for product development. But segmentation cannot always fulfil both purposes.

Segmentation is essential for creating a base for such selection and many regard market segmentation as vital to business success (Dibb and Simkin, 2001). The market understanding created based on segmentation is of key importance for marketing and product development. On one side, the information is used in creating a marketing plan, and on the other side the information is used in the product development process. A segmentation used to gain market understanding both for marketing activities and the product development process needs to be two-sided. However, in the literature it often seems that segmentation either addresses the product development side or the sales and marketing side, seldom considering both. It becomes an issue for the company whether it should segment before or after products are developed.

Example case of a large Danish industrial company

The case below illustrates some of the above factors as well as illustrating that it can be problematic for a company to simultaneously employ a single segmentation for several purposes. A large Danish industrial company develops and sells electronic equipment for manufacturing companies and OEMs. The company has experienced a high degree of change both in the technology they utilize in their products and in the market. In the market, new users and applications have continuously arrived and new demands have been raised that the product must meet. This has resulted in increasingly complex products.

The company has for years had a segmentation that seemed good for sales of the product, i.e. market communication, pricing, distribution, management of the sales forces, and partly the handling of market information. However, the segmentation could not explain which and why customers bought different products and what application and features they used etc. This had the consequence that the product development department had problems relating to the segments and using them in their work. Likewise, marketing had problems with specifying future products based on the segmentation. The product specification often ended being too general in nature and almost had the form of "we need it all". In addition, although it seemed that there was a certain type of customer that bought the product it could not be explained who they were. The result of this was that it was hard to plan the future product line and to select future technological focus areas for the company based on market needs. The product became broad and complex and less focused on specific customer segments. However, one way or the other critical decisions of the performance/specification of the product had to be made, as a result they often became more technical based than market based as the decisions in the end were made by the product development department.

It seemed that marketing was caught in the middle between what was needed for marketing the existing products and what was demanded from them in order to help structure the needs and specifications of the future product line and products. However as the market became more complex and changing the situation became more unmanageable for the company and they needed to reconsider the entire product portfolio and thus which customers they wanted to serve and with which products and technology. It was however realized that in order to handle the increasing complex market it was necessarily to segment the market on a strategic level where product development was one of the main focus points.

There seems to be different needs or purposes for segmenting. The overall strategic for product development and more marketing dedicated for both strategic and tactical decisions.

The company chose to make a new segmentation that was more dedicated towards product development. The segmentation was based on a strategic level so that it could form the background for selecting future customers, planning the product line and for become the foundation for creating future proof product platforms. In order to conduct such a segmentation the company created a cross functional team that planned, conducted and later implemented the segments. Based on this approach a large and cross functional group got an understanding of the purpose behind the segmentation, got influence and most importantly felt ownership of the resulting segmentation. The newly identified segments gave a much better understanding of which customers they actual served, but also of which customers would be the most optimal to serve based on current product line and competences. Thus the company chose to serve new customers and gave up some industries that previously had seemed large, growing and promising for the company, but now it was obvious that their demands were far from that of other customers. The segmentation gave a foundation for defining a new product line where the needs of the different segments were defined, as well as the variety in needs within and between the segments. The segments also formed the basis for promotion campaigns, and the Product Development found the segments much better at specifying future products than the previous segmentation. However the old segments were kept for use in Marketing as they were suited for structuring market intelligence and reporting to the sales subsidiaries. In other words the organisation ended up having two different segments, as the needs and related activities were difficult to combine in the actual work.

Description of the segmentation classification matrix

The above case shows that a company can have different purposes for segmenting the market and that a segmentation that seems to work for one purpose might not be sufficient for another. It appears that given different internal situations segmentation should handle different purposes and tasks. Furthermore, in the theoretical presentation the question was raised whether segmentation is conducted for market targeting or if more strategic considerations should be included, such as whether the segmentation should take place in such a manner that product development would be included and in some situations directly integrated into the segmentation process.

Based both on empirical research and theory, two dimensions have been identified that seem to separate the segmentation activities. The first dimension relates to the level the segmentation implementation is taking place with strategic on one side and operations on the other. The second dimension has to do with the product, with existing products at one end and yet to be developed products on the other. The following section further explains each dimension.

The first dimension can be seen as consisting of planning and customers. Planning is about how to reach the customers and customers are about defining who they are and what they want. Kotler (1990) defines market segmentation the following way: "Market segmentation is the subdivision of a market into distinct subsets of customers, where any subset may conceivably be selected as a target market to be reached with a distinct marketing mix". In the Kotlerian world identifying a subset of markets is about detecting heterogeneous preferences and buying behavior and classifying these subsets into homogenous segments. Planning is about fine-tuning the marketing mix to acquire a strong marketing position. More strategic questions are left out of the segmentation process. E.g. as a part of the strategic planning process the company is supposed to deal with potential and/or present customers and whether or not market offerings should be modified or if new products should be developed.

Many authors find that segmentation is an important part of strategy formation. However, Goller et al. (2002) find that in the literature there appears to be a confusion as to the level where segmentation is implemented in the company. On one hand segmentation can be on a strategic level as it involves guidelines to resource allocation among products and markets, while on the other segmentation can on an operational level used to adjust the marketing mix elements. De Kluyer & Whitlark (1986) reflect upon the strategic and operational dimensions in relation to industrial markets. They state "The evidence shows

that making the segmentation concept operational and strategically relevant in an industrial context is extremely difficult, possibly more so than for consumer goods, p. 274". A major reason for this is the complexity of the buying process and that the market offering is often not predefined by the selling company but is developed or adapted during the interaction process between buyer and seller. In markets where the customer is involved in the process of developing the product offering it is somewhat problematic to see resource allocation separate from the segmentation process. Segments are not given identities but are actively created in the interaction between the parties involved in the process. This leads Mitchell and Wilson (1998) to the following definition of business segmentation: "Business-to-business market segmentation is an ongoing and iterative process of examining and grouping potential and actual buyers with similar product needs into subgroups that can then be targeted with an appropriate marketing mix in such a way as to facilitate the objectives of both parties p. 431".

In the classification matrix presented below the first dimension distinguishes between the strategic and the operational level, denoting whether the segmentation looks at the more fundamental situation of the company or if there is a focus on finding a position in relation to the customers within the existing framework. Will the segmentation be conducted on a higher strategic level where e.g. the entire product line or customer base are selected and resources allocated for, or will the segmentation be conducted on an operational level for implementing the identified segments e.g. instrumental adjustment of the marketing mix? In other words, how large or fundamental an effect will the segmentation have on the company?

The second dimension can be seen as whether the product is given beforehand or is it a factor that can be effected. The view marketing have of the product is therefore central. In the marketing segmentation literature products are often viewed as being given entities and not as variables. Products are regarded as already developed, and the company as now having the task of offering the customers the right products, combined with the appropriate communication and distribution. However, according to Webster (1991) in industrial marketing strategy the product should be seen as a variable, not as a given entity. The market segmentation should be an important and active part of product planning strategies. Webster (1991) finds that "since the whole bundle of product and service attributes must be tailored to fit the customers' needs, it follows that the selection of customers, the market segmentation decision, is a necessary step before the final definition of the product line and individual product". Therefore, the makeup and size of the product line depends on the extent to which the market can be segmented and how the company wants to position itself (Mullins et al., 2004). How the product is viewed in relation to the segmentation should reflect the purpose for segmentation, whether it is conducted for marketing existing products and/or the planning of future products.

The second dimension in the classification matrix presented below distinguishes whether the product is seen as a given beforehand or if it is possible to change the product based on the segmentation. If the product or product line can be directly affected by the segmentation it is named 'new product', however if the segmentation is conducted with more specific products or product line in mind it is considered 'existing product'. If the product is not given it can be expected that product development plays a more central role in planning, conducting and implementing the segments. If the product is not given it is likely to be conducted with a stronger marketing focus and be more centred on the needs of the marketing and sales functions.

The four situations in the matrix the segmentation classification matrix

The classification matrix presented below consists of four situations that each generate different demands for the segmentation, how to conduct it and what to involve. The matrix shows that there are different contexts and purposes for segmenting which create different demands to segmentation. The four situations differ regarding when to segment, what to do, and how the result will be utilized. The situations are based on internal activities conducted in a company, and are therefore seen in relation to the activities a company conducts and when it might need to segment. It is based on the internal activities as to what is needed and when to segment rather than having the market as its starting point as market segmentation traditionally has. There will be special focus on the combination of strategic level and new products, as well as the combination of operational level with existing products. This is done to show the differences

between two of perhaps the most different cells and as an equally comprehensive attention to each area would be too extensive.

Figure 1 The segmentation classification matrix

	New product	Existing product
Strategic level	<p>Deals with the fundamental question of who are we, what do we want, what customers, technology, marketing mix, product portfolio etc. to deal with.</p> <p>Used with newly established companies, new divisions, new product lines, new technologies etc. and re-segmentation (in principle the same considerations).</p>	<p>Questions are still fundamental in nature revolving around how to position in the market and how the marketing mix can be harmonious with the organizational base and support the products.</p> <p>Used to create new connection in existing customer and product portfolio/program.</p>
Operational level	<p>The purpose to segment for the individual products Help specification and differentiation of product Concrete consideration of the marketing mix.</p> <p>Often conducted when new products are developed or major changes are taking place.</p>	<p>Adjustment of the marketing mix.</p> <ol style="list-style-type: none"> 1. Used for re-segmentation for the individual product due to new placing in the product life cycle. 2. Used in the operationalisation of a more strategic segmentation both internal and external considerations.

Strategic level with new products

In this section of the classification matrix the segmentation is intended to be used on a strategic level and in a context where it is possible to effect the product and customer portfolio, the technological competences of the company etc. The fundamental task is to decide on which customers the company wants to serve. This is a situation that has a major effect on the future of the company. Information is primarily gathered with the overall identity and brand of the company in mind and to a lesser degree contains considerations that have direct implications for how the market offer should be composed. It is a matter of developing concepts and giving ideas to a more concrete plan.

Such segmentation can take place when a company starts, a new division is created, a new technology is taken into use or a company chooses to offer an entirely new product category. In this kind of situation the company will be open to such fundamental questions as who are we and what do we want? The company will therefore find it important to get an insight into what type of products the portfolio should consist of, and how to position and differentiate the products in the market. They will consider and select customer types, technology, marketing-mix, competences and product line. However it is difficult beforehand to answer all off these question when the company does not have a working experience in the market. Nevertheless it is important to have this insight.

Over time it can become necessary to re-segment the market. For example if the market has changed, or if new customers or new technology opportunities have arisen. Similarly if the company chooses to use product platforms the segmentation can be a fundamental tool in planning which products should be in the

portfolio or product line, and which customers will use which products. When re-segmenting the market a company would ask the same fundamental questions as when making a new start.

Segmenting with new products helps structure and guide critical decisions such as which customer segments to select, which products to offer in the product line and how to position themselves on a more strategic level, as well as which technological and general competences the company should possess in the future. Decisive for this are internal and external conditions such as the customers needs and wishes, technical demands seen in relation to companies resources, competences and possibilities to meet customer wishes and demands etc.

Segmenting for new products is problematic. This can be caused by many things e.g. products are complex, the requirements of the customers varies, the knowledge the customers have of the product varies, customers might not be aware of the possibilities that new technologies enable, and future oriented data is often needed.

Strategic segmentation for new products places special demands on the Marketing department. The Marketing department needs to understand both the present and future needs and wishes of the customer as well as the limitations and considerations of other functions, especially Product Development, but also Operations and Management. As each of these functions have different goals, constraints and performance requirements. This is particularly demanding in companies where the technology is complex. Developing new products requires a close interaction between Marketing and Product Development in the planning and execution of the segmentation. On the overall level it is a Management job to clarify and establish the frames for the market offerings. Even though it is Marketing that makes the presentations, Management should ensure that cooperation between functions across the organization has taken place that can strengthen the sales effort in practice.

To segment before products are developed may mean that Marketing and Product Development have to become better at communicating, and that Marketing invites Product Development to participate in areas that they may consider as their own domain: planning, conducting the segmentation and selecting the segments. The extent to which Product Development and Marketing are able to use the information and the extent to which they are capable of learning from the experiences of each other is therefore of central importance. It follows that the validity of a segmentation process depends on whether the Marketing and Product Development are able to develop a well-functioning, iterative learning process together.

Operational level with a new product

In this category of segmentation the segmentation is made with a specific yet still future product in mind. In relation with individual product development projects further research will traditionally be conducted into the selected segments. Even if a good segmentation has been conducted at the strategic level it cannot be expected that the specification of the individual future products has been uncovered.

This type of segmentation is desired when a company intends to develop a new product e.g. extend the product line or undertake major updates of an existing product. The segmentation is used in order to define the market for a new product, so the product can be specified and later serve as the foundation for decisions on how to target the market. An important aspect of the segmentation is the positioning and differentiation of the product in the segments. A central point in the segmentation can therefore be expected to be concrete customer needs, but the segmentation should also create the foundation for concrete marketing-mix considerations.

This segmentation could take place within some segments identified in a more strategic level segmentation, e.g. when specifying a product line in relation to identified customer segments. In situations like this the segmentation could be considered as a deepening of the previous segmentation. While for some companies this could be a further segmentation, for others it could be the central one. Being the central segmentation could be the case if a company has products where there is little resemblance between products in e.g. technology or customer use and segmenting for each of the products is relevant.

At times it is only possible to segment after or late into the product development process, e.g. if the technology and market are completely novel, or if rapid changes are taking place in the market so insufficient knowledge of the market exists, both among potential customers and in the company. In such situations the needs of the customer may first become evident when they interact with the product. Under such circumstances it is complicated or impossible to segment the market before product development takes place. In some cases it will be possible to segment the market when the products have been developed and different possible applications emerge.

Strategic level with existing products

The goal here is to segment for marketing at a strategic level. The segmentation is conducted when a company feels a need to more fundamentally evaluate the situation of the company, to create a connection in their product portfolio, or adjust the marketing-mix so that the organizational base better connects and assists the products. The segmentation could be conducted broadly with a specific purpose in mind such as price, promotion, increased understanding of the customer portfolio, etc. The purpose could also be to reposition the company and its products in the mind of the customers. This type of segmentation is often conducted primarily as a marketing activity, with little to no involvement from Product Development. However as the implementation of the segments has an effect on the rest of the organization it is recommended to share information with other functions.

This type of segmentation is more likely to take place when a company has mature products where market development and positioning and the products are improved incrementally. The focus will then often be on differentiating the company and its products. It could also be actual if Marketing has no influence on the product development or do not think they have, or if the cooperation and communication is lacking between the two departments. This however could result in a situation where the products of the company do not meet the needs of the customer.

This form of re-segmentation occurs when minor changes in the segmentation do not seem to have the necessary effect. The company then needs to look more critically at the way it has been positioning itself and the way it approaches its customers. The type of customers addressed may need to be changed and the market offerings (products, logistics, cooperation forms) may have to be redesigned.

Operational level with existing product

In the final category the focus is on two main situations. The first situation is on a specific product, but where the segmentation is conducted not to change the product, but for repositioning it in the market. This re-segmentation could be needed if changes have occurred as the product moved through its life cycle. Repositioning could also be needed for products that a company wants to retarget for a new use, a new application, presenting in a new country, or use new channels of distribution. Segmentation can be conducted in order to increase sales or extend the product life cycle, e.g. through better targeting of promotion distribution or pricing etc. This type of segmentation will often be carried out when the market or products are mature as the focus is on the market development and less on the development of new products. However there could easily be other reasons for re-segmenting.

The second situation is focusing on implementing the segments found on the more strategic level. This could relate to adjusting and planning the market offers i.e. the price, promotion, distribution etc. as a concrete example it could be making plans for the sales people as what to do when within the different segments.

Identifying changes in the segments

Eventually there could be monitored if customers are moving in or out of the segments selected by the company and if this necessitates segmentation on the more strategic level. Some of the well-known segmentation authors look at fine tuning of the segmentation and marketing of the products. However the amount of models seems to indicate that even when a company is situated in a known market with a known product it can be difficult to accurately hit the customers' needs. A number of more operational

actions in form of campaigns, price cuts etc. plays an important role in the operational analysis. The customers will in many instances have experience using the product and know of the company and other companies within the market. Positioning conditions and experiences with cooperation with other actors can play a central role. A challenge lies in picking up which market initiatives are more permanent and which are more short-lived. Another challenge is to be open-minded towards different interpretations of the data, in order to avoid getting stuck in certain patterns of interpretation.

Market data to be gathered will be relatively broad in order to ensure that important trends and challenges have been identified. However, weight is placed on the more short-term operational considerations with a view for eventual small adjustments of the segment description and the marketing effort. Sales and Marketing play a central role in both interpretation of the data and in planning the marketing effort. The plan for the marketing effort contains a number of instructions of how the product should be presented, distributed and sold. It is however central with broad information distribution so that not Product Development is included in an explicit validation of the data.

Discussion of the matrix

Companies would probably not carry out segmentation within each of the four cells. First of all it could give conflicting views of the market within the company, as well as being costly to conduct. However it could also be discussed whether it is actually avoidable as also proposed in the text there are situations where it is appropriate to have different segmentations as the purposes are too different e.g. for product development and for communication or if one segmentation understanding is well implemented and the new segmentation then has to live a parallel life with the old e.g. one for Marketing and one for Product Development. This was the situation in the case example given above. The company implemented the new segmentation, however also kept the old one. The reason was that the purpose for the two segmentations was different. The new product development-based segmentation fitted the product specifications, whereas the old segmentation was useful for the activities in marketing, reporting, gathering of information etc. this created a bit of tension as Marketing wanted to use the traditional and old segmentation in reporting whereas Product Development insisted on the use of the new.

Having two segmentations in the organisation can create problems. Firstly it is expensive to conduct the two segmentations, but it can be necessary if the existing segmentation is not appropriate. The needs of the Product Development and Marketing are different in nature. Product Development is focused on future needs, while Marketing is focused on existing offerings. So in some situations differences could prevent a common use of segmentation. In relation with an individual product development project further research will traditionally be conducted into the selected segments, for example, regarding the customers' needs, wishes and preferences. A further segmentation, dedicated to the individual development project can also take place within the segments. Individual product segmentation would probably be most topical when there are big differences between the different products or the make up of different product lines.

Secondly the existence of two segments can create increased coordination problems and thereby expenses. The increased need for coordination, might not in itself be a problem, however it could create some unnecessarily tension in the organisation as more communication and translation is needed. This could be a further burden on the sometimes problematic communication between Marketing and Product Development as they have different languages and interests.

Furthermore different segments could lead to internal conflicts, regarding which is used and which is most important and takes priority. Thus it could be important to ensure or create some sort of interlink between the different segmentations so that the Sales and Marketing functions sell and market to the same customers that Product Development develops products for. This however means that even though there are different cells to conduct segmentation within, a company should be careful selecting when and for what reason they segment.

Finally it might be a problem if the customers experience signal problems, e.g. the communication to the customer might put weight on certain features that are not focused on within Product Development. In the worst case Marketing might promote something that is not included in the product.

The matrix is divided based on two distance dimensions i.e. product development and the strategy. The product development dimension seems to be unambiguous and give a good and clear distinction between the cells. The strategic dimension is more ambiguous as there is a movement between the two levels. In some situation the operational level consists of individual products e.g. management of the life cycle or an actual segmentation. In other situations the operational level is a making operational the segments identified on the strategic level.

The separation of the strategic and operational level can in some instances seem difficult. Some of the questions to address will be the same on the two levels, but the purpose will be directing in what way the questions will be addressed.

The matrix does not explicitly take a stand on the market orientation of the company i.e. if the company is customer, competitor or product oriented. It merely looks at the different stages a company can be in and gives the type of segmentation that the company would benefit from selecting.

Theoretical contributions in relation to the four situations

The following looks at the literature in relation to the four situations. This is done in order to see what types of contributions have been given within the four areas. It will be shown that there can be found articles within the different areas. Most common is contribution in areas where the product already exists, but work has also been conducted in the area where the product the products are new.

Theory in relation with strategic level with new products

Fewest contributions seem to have been given in the strategic area where the product is not given. This does not necessarily mean that it is less important but perhaps reflects the difficulty of this kind of segmentation where complexity is high and one is dealing with future oriented needs and trends. However, regardless of its complexity authors find it important. Kluyver and Whitlark (1986) express that operationalizing the segmentation concept for industrial products and making the segmentation research strategically relevant constitute a formidable challenge for marketing researchers and practitioners alike (Kluyver & Whitlark, 1986). Montoya-Weiss and Calantone (1999) state that one of the most critical decisions that managers make in multi-product, multi-market firms are choices concerning what product to produce and which markets to address. Furthermore they find that segment selection has significant implications for new industrial product strategies. Product-market choices have significant strategic implications that determine the future of a business and involve all functional areas within an organisation.

Montoya-Weiss and Calantone (1999) make a systematic procedure that identifies and selects market segments and product portfolios so that customer preferences, organisational objectives, and resource constraints are simultaneously satisfied. The method incorporates conjoint analysis, cluster analysis, a product design optimisation simulation and multi-objective integer-programming model. Kluyver and Whitlark (1986) propose a benefit segmentation that they find provides a detailed picture for customer needs in different industries for different applications useful for product design, pricing, distribution, and marketing support decisions as well as for gaining a better understanding of the firm's competitive position and immediate and future opportunities. Clarke (2002) also addresses segmentation for product development on a more strategic level. More qualitative based methods are used to identify segments and a future product line as the market and product are complex and with many different product features present and customers with many different application. Methods such as conjoint and many traditional industrial segmentation methods cannot handle the complexity of data especially data of customers needs. Even though this category in the matrix has least contributions it seems in the literature to be

recognised for its importance especially within the product development literature (Wheelwright and Clark, 1992; Meyer, 1996; Robertson and Ulrich, 1998).

Theory in relation with operational level with new products

Most of the contributions in the product development literature and segmentation literature that consider the product as a parameter that can be influenced focus on the individual product. Many of the methods proposed are driven from the consumer literature and are statically in nature. The literature in consumer segmentation is extensive (Urban, Hauser, 1993; Beane and Ennis, 1987; Mahajan and Wind, 1992; Green et al., 1997; Weiner, 1994), however far fewer contributions have been made to industrial market segmentation. Such methods as benefit segmentation, conjoint, cluster and multidimensional scaling are suggested, as they both create segments and can be used to positioning or repositioning the product in the market, evaluate the product, forecast new products, and with some methods, point to the optimal product for a market.

Two important approaches are benefit segmentation and conjoint analysis. Benefit segmentation is based on determining why a customer buys a product and then communicating the benefits that existing customer sought to similar potential customers. Benefit segmentation groups the customers that seek the same benefits from the product (Beane and Ennis, 1987). Conjoint analysis is a quantitative market research technique that determines how customers make trade-offs between a small number of different features or benefits. The basic premise is that the value of a product is evaluated by combining the separate amounts of utility provided by each attribute (Green and Srinivasan, 1990)

The methods are not widely used in industrial markets. The reason for this might lie within some of the limitations that characterize statistical methods and that the methods do not match the nature of many industrial markets. The methods cannot handle many attributes such as with the complex products and customers that often characterize industrial markets. In industrial markets customer uses the product in many different application, which make e.g. a conjoint much more complex. Industrial products often have multiple applications, the customers vary greatly, and several different products can be used in the same applications. It can be difficult to distinguish which differences are important and which are insignificant for developing marketing strategy (Shapiro and Bonoma, 1984; Griffith & Pol 1994; Klyver and Whitlark, 1986). Furthermore industrial companies have different relationships with customers and different types of customers. The desired contact with the customer varies, as does the need for feedback and how to conduct market segmentation for product development.

The three different customer examples below visualize the complexity of segmenting for product development. Each situation creates different demands and consequences for the company and the segmentation method.

1. There are only a few customers and the customers define their needs in close cooperation with the company that then makes a more dedicated product for the customer
2. There are many customers and they are fragmented in their needs, using multiple applications etc. (See above Shapiro and Bonoma, 1984; Griffith & Pol, 1994; Klyver and Whitlark, 1986).
3. The customer is uncertain about the product and they do not know what they can be offered or what they need. As described by Bonoma and Shapiro (1984) potential customers may be unaware of their needs until they are actually presented with a way to satisfy them.

Statistical methods work best when the problem is simple but made complicated by the amount of data, or involve mature technology and markets where customers are familiar with a product concept and have developed preferences for the functions and performance levels they want a product to provide (Tidd et al., 1997). Conjoint analysis for example is less usable if attributes cannot be defined explicitly and it cannot handle situations where several products are used for different applications or people. Also, conjoint analysis does not consider the option that the customer may not prefer any of the combinations.

Researchers have worked on solving some of these problems (Carroll and Green, 1995), but solutions do not seem yet to have become commercially available to industrial practitioners.

However the industrial markets are very diverse and situations exist where statistical methods are suitable.

Theory in relation with strategic and operational level with existing product

The goal for authors in this cell has been to contribute to segmenting the market for strategic purposes. This is the area where most contributions have been found. Some authors have presented methods for the segmentation e.g. order of bases, others have suggested new bases for conducting the segmentation. They belong to this cell as they take the product for given or consider it implicit. However the dividing line between the strategic and operational level is not as clear and many authors move into the operational area as well, when they e.g. propose changes in the marketing mix.

Various authors have contributed with new bases for segmenting industrial markets. As mentioned in the beginning of the paper Griffith and Pol (1994) propose segmenting based on demographics data. They look at market segmentation for a specific type of equipment sold to retail chains and individual stores within a given product line. Rese and Söllner (2001) suggest industrial segmentation could be improved if information on competitors is considered in the segmentation process. Other examples of authors who contribute with bases are File and Prince (1996) who point to the use of psychographics to segment industrial family businesses e.g. personal objectives and motives of the manager. Albert (2003) offers a need-based or microsegmentation process in mature industrial markets. Freytag and Clarke (2001) propose the use of relationships as a base and Verhallen et al. (1998) suggest improving the effectiveness of industrial segmentation by using unobservable characteristics such as organizational strategy. Finally Laughlin and Taylor (1991) present a model that considers controllable marketing variables when identifying macro segments. He reasons that the goal of industrial market segmentation is not always to look for homogeneous markets but can also be to find homogeneous responses to marketing stimuli.

Many authors have proposed variables that can aid understanding and improve segmentation. However few authors relate the segmentation closely to the strategic activities they are part of. They primarily see it as part of a plan for selecting customer segments and as a foundation for directing and adjusting the marketing mix in accordance to the different segments. Many authors, instead of placing segmentation in a strategic context, move into the more operational area. This also counts for some of the most known methods e.g. Nested approach where there is given recommendations to the marketing moves. Other examples include Albert (2003) recommending customised product services packages and targeted communications to buyers through specific product service offerings.

Others sees the segmentation as particularly useful in personal selling e.g. File and Prince (1996) which suggests that salespeople can use psychographic insights to categorize individual buyers and to position their product against the benefits sought by the buyer. Robertson and Barich (1992) made a case study about segmenting based on the knowledge salespeople need to have about the customers. Each category identified makes different demands of the sales force, manuals and communication. All of these above examples of segmentation propositions could also be seen as also placed in the operational area.

Many of the bases suggested point to ways of understanding and segmenting for micro level especially the buying behaviour of companies e.g. File and Prince (1996), Albert (2003), Verhallen et al. (1998). Microsegmentation further refines the groups based on behavioural variables characterizing buying centers and their members. This observation is supported by other authors who also have criticized the focus in the industrial marketing literature on buying behaviour (Hlavacek & Reddy, 1986; Mitchell and Wilson, 1998). The buying behaviour concerns how to reach and effect the customer thereby pointing directing marketing planning which support the above finding that many of the segmentation bases points towards the more operational area. This is in contrast to the strategic level that more fundamentally considers who the customers are and what they want. Bases that revolve around customers e.g. needs

can perhaps give a more underlying understanding of what customers want. Especially in industrial markets it has been presupposed that needs have been directed towards the fulfilment of company goals and that this would be sound ground for segmenting customers. But as clearly indicated by Webster & Wind already in 1972 not only task factors are the drivers behind the behaviour in the companies.

There could appear to be a concordance between the different segment approaches and the life cycle. The more mature the more focus on the marketing side (Albert, 2003; Rangan et al., 1992), the more dynamic, the more focus on the product as a variable. Many of the empirical contributions proposed for the cells where the product is taken as granted are conducted in mature markets e.g. Griffith and Pol (1994), File and Prinve (1996), Albert (2003), Rese and Söllner (2001), Bennion (1987), Rangan et al. (1992). Mature markets are often more competitive, the possibility for differentiating the product has been limited and the focus is on altering the marketing mix variables such as price and service, declining demand, over capacity and falling prices are common. However there are exceptions, both Verhallen et al. (1998) and Johne (1984) propose bases within this cell for a market in growth e.g. Johne (1984) finds a link between innovative behaviour for high technological companies and their buying.

There are some problems incorporating the existing theories into the matrix as they often have a view from the company out to the market, where as the matrix tries to identify how, when and which needs a company have internally to segment. The problem fitting the segmentation models into the matrix is not only about the difficulty of getting everything to fit nicely into a typology, it is also an indicator of a need for a different view on segmentation. If segmentation models are not able both to fulfil the needs for product development and dividing the market into meaningful segments, there is a risk that two different processes will be conducted and not integrated.

Relationship and segmentation

When segmenting for the industrial market the issue of relationships becomes an important aspect. Depending on the relationships with customers this may affect how segmentation is conducted and who is involved in the process. The degree of relationships can be seen as a spectrum. On one side relationships can be described as arms length and on the other relationships are closer and the interaction between the companies has a high frequency and a deep content. This will have an impact on how segmentation is conducted and who may get involved in the process. Traditionally the segmentation literature has implicitly focused on arms-length situations, where the company is more distanced from the customers and freely can select how to segment the market and which customers to handle. On the more relationship-based side of the spectrum the attachment to customers plays a more important role also in relation to the segmentation. The following will discuss how relationships relate to the segmentation classification matrix presented above.

Looking in particular at the situation where new products are developed and the perspective is strategic the fundamental question is of how close the customer and the supplier can or want to get to each other. One type of relationship-based segmentation could be to segment to find customers that would be interested in having close relationships, but not necessarily in letting the customer participate in the actual segmentation of the market. A more radical approach is to let the customer participate in forming the segments. This could be the case when the customer has a saying on the choice of segmentation bases. The customer could have an interest in identifying other customers that might help the supplier improve or gain competences that they themselves could benefit from. A problem with this segmentation form can be that the customers could act opportunistically and force the company not to select other promising prospects on the market. A very close involvement by the customer in the segmentation process will in reality have the effect that the customer has an influence on how the company defines its role in the network. Trust (Blois, 1999) will be of importance as the customers may get very close to how the focal company actually views its customers and chooses to address the customers.

When it comes to less complex situations, for example with an existing product at an operational level, it is quite obvious that close customers may be involved in the adjustment to the segment and of the marketing-mix.

The discussion of how to address different types of relationships raises the question of why relationships are not the building block of the segmentation matrix. First of all the major part of the segmentation literature focuses on the product, or more precisely the market offering, and not on the relationship. Therefore for both analytical purposes and with the intention of contributing to a better understanding of what segmentation is about, the focus is on the market offering. Secondly it is possible to use the matrix even though the focus is on relationships as demonstrated in the above. In principle this means, when relationships are introduced, the four situations become eight situations, depending on the degree of closeness of the relationship.

Implications and conclusion

The paper has attempted to group the different purposes for segmentation depending on situation. Four different situations were described and discussed in relation to the segmentation literature.

Segmentation has in the paper been seen as a whole, not only as something linked to the market, but to the entire organisation. Based on the purpose of the segmentation it has been shown that different types of activities will be needed in the organisation and different functions may be involved, including product development.

As Datta (1996) pointed out, a good understanding of how a market is or how it can potentially be segmented should no longer be a matter of interest to marketing analysts alone. It should be a central concern of top management and strategic planners as well. It is, as we have demonstrated, also important that segmentation in some situations is integrated into product development and therefore that the segmentation task is also a task in which Product Developers are participating.

The matrix was found to be a good instrument for analysing existing models in order to uncover what problems these models address, and, hence, where in the company's activities the matrix can be used. The matrix has shed new light upon the general understanding of segmentation literature and uncovered areas for further investigation. Furthermore, it is our hope as demonstrated in the case that the matrix can be used to shed light on some problems areas in the organisation.

Companies may also use the matrix as it can make them aware that there are different reasons or needs behind segmentation and there are different problems relating to these areas. Very few in the segmentation literature link product development to segmentation, even though this link is very important in order to develop products for the intended customers.

In addition to the discussion of the classification matrix, we would like to point out two areas that need further clarification: the dimensions of the matrix and the significance or importance of the types of customer relationships.

The two dimensions of the matrix, product and planning level, seem relatively straightforward and unambiguous, which was also shown in the discussion of the theoretical contributions. However, the split into two planning levels was less straightforward. This is, however, not a problem in itself, as the segmentation models discussed here do not explicitly address the strategic and operational levels. The problem is not the typology but that the typology offers an opportunity to raise a central problem with some issues in the existing segmentation theories. Some segmentation models explicitly address the question about the strategic and operational levels whereas other models do not address these issues explicitly.

It was demonstrated that it is possible to think in relationships in the matrix although the matrix at a start did not include relationships as such. For future research purposes it could be useful to integrate relationships further more into the segmentation classification matrix.

References

- Albert, Terri C. (2003), "Need-based Segmentation and Customized Communication Strategies in a Complex-commodity Industry: A Supply Chain Study", *Industrial Marketing Management* 32, 2811-290.
- Abratt, Russell (1993), "Market Segmentation Practices of Industrial Marketers" *Industrial Marketing Management* 22, 79-84.
- B. Shapiro and T. Bonoma (1984), "How to Segment Industrial Markets" *Harvard Business Review*, May-June, 104-110.
- Baker, M. J. (2003), *The Marketing Book*, Butterworth & Heinemann, Oxford.
- Beane, T.P. and D.M. Ennis (1987), "Market Segmentation: A Review" *European Journal of Marketing*, Vol. 21, Nr. 5, 20-42.
- Bennion, Mark L., Jr (1987), "Segmentation and Positioning in a Basic Industry" *Industrial Marketing Management*, 16, 9-18.
- Blois, k.(1999) "Trust in business to business relationships: An evaluation of its status" *Journal of Management Studies*, 36, 2, 197-215.
- Bonoma, T. and B. Shapiro (1984), "Evaluating Market Segmentation Approaches, *Industrial Marketing Management*, 257-268.
- Campbell, N. (1985), "An Interaction Approach to Organizational Buying Behavior"
- Carroll, J Douglas, Paul E. Green, (1995), "Psychometric methods in marketing research: Part O, conjoint analysis", *Journal of Marketing Research*; Chicago, Nov, Vol 32, Issue 4. 385-395.
- Clarke, Ann (2004), "Segmentation of Industrial Markets and Determining Product Lines for Product Development" *Dissertation from University of Southern Denmark*.
- Datta, Y. (1996), "Market Segmentation: an Integrated Framework", *Long Range PlanningK*, Vol. 29, No 6., 797-811.
- Dibb, S. and L. Simkin (2001), "Market Segmentation Diagnosing and Treating the Barriers" *Industrial Marketing Management*, 609-625.
- Dibb, S. and R. Wensley (2002), "Segmentation Analysis for industrial Markets" *European Journal of Marketing*, 231-251.
- File, Karen Maru and Russ Alan Prince (1996), "A Psychographic Segmentation of Industrial Family Businesses", *Industrial Marketing Management* 25, 223-234.
- Freytag, Per Vagn and Ann Højbjerg Clarke (2001), "Business to Business Market Segmentation", *Industrial marketing management* 30, 473-486.
- Goller, S., A Hogg & S. Kalafatis (2002), "A new research agenda for business segmentation" *European Journal of Marketing*, 252-272.
- Green, Paul E, Abba M Krieger and Terry G Vavra, (1997), "Evaluating new products" *Marketing Research Chicago*; Vol. 9, issue 4; Winter, 12-21.
- Griffith, R. and L. Pol (1994), "Segmenting Industrial Markets" *Industrial Marketing Management*, 39-46.

Hlavacek, James D. and Reddy, N. Mohan (1986), "Identifying and Qualifying Industrial Market Segments", *European Journal of Marketing* 20, Fall, 8-21.

Johne, Frederick A. (1984), "Segmenting High Technology Adopters", *Industrial Marketing Management*, 13, 59-63. *Journal of Business Research*, 35-48.

Kluyver, C. de and D. Whitlak (1986), "Benefit Segmentation for Industrial Products", *Industrial Marketing Management*, 273-286.

Mahajan, Vijay, Jerry Wind (1992), "New Product Models: Practice, Shortcomings and Desired Improvements", *Journal of Product Innovation Management*, Vol. 9, 128-139.

Meyers, James H. (1996), *Segmentation and Positioning for Strategic Marketing Decisions*, First edition, American Marketing Association.

Millier, P. (2000), "Intuition Can Help in Segmenting Industrial Markets", *Industrial Marketing Management*, 147-155.

Mitchell, V-W and D. Wilson (1998), "Balancing Theory and Practice" *Industrial Marketing Management*, 429-445.

Montoya-Weiss, Mitzi and Roger J. Calantone (1999), "Development and Implementation of a Segment Selection Procedure for Industrial Product Markets", *Marketing Science*, Vol. 18, No. 3, 373-395.

Mullins, W: John, Orville C. Walker Jr., Harper W. Boyd Jr. and Jean-Claude Larréché, (2004), *Marketing Management – a strategic decision-making approach*, McGraw-Hill.

Plank, R. (1985), "A Critical Review of Industrial Market Segmentation" *Industrial Marketing Management*, 79-91.

Rangan, V. Kasturi, Rowland T. Moriarty, and Gordon S. Swartz (1992), "Segmenting Customers in Mature Industrial Markets", *Journal of Marketing*, October, Vol. 56, 72-82.

Robertson, David and Ulrich, Karl, (1998), "Planning for Product Platforms," *Sloan Management Review*; Cambridge; volume 29, issue 4, Summer, 19-31.

Robertson, Thomas S. and Howard Barich (1992), "A Successful Approach to segmenting Industrial Markets" *Planning Review*, November/December, 4-11.

Sheth, J. N. and A. Sharma (1997), "Supplier Relationships" *Industrial Marketing Management*, 91-100.

Sollner, A. & M. Rese (2001), "Market segmentation and the structure of competition: applicability of the strategic group concept for an improved market segmentation on industrial markets" *Journal of Business Research*, 25-36.

Tidd, Joe, John Bessant, Keith Pavitt, (2001), *Managing Innovation, Integrating Technological, Market and Organisational Change*, Second edition. John Wiley & Sons, Baffins Lane, Chichester.

Urban, Glen L. and Hauser, John R. (1993), *Design and Marketing of New Products*, second edition Prentice- Hall, Inc.

Verhallen T., R. Frambach & J. Prabhu (1998), "Strategy-Based Segmentation of Industrial Markets" *Industrial Marketing Management*, 305-313.

Webster, F. and Y. Wind (1972), *Organizational Buying Behavior*, Prentice Hall Englewood Cliffs

Webster, Frederick E., (1991), *Industrial marketing Strategy*, Third edition, Canada: Wiley.

Weiner, Jonathan (1994), "Forecasting demand: Consumer electronics marketer uses a conjoint approach to configure its new product and set the right price" *Marketing Research*; Chicago; Vol. 6, issue 3, Summer, 6-12.

Wheelwright S.C. and K.B. Clarke (1992), *Revolutionizing Product Development: Quantum Leaps in Speed, Efficiency and Quality*, New York: Free Press.