

DESIGN IN BUSINESS - TO - BUSINESS MARKETS

by

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Abstract:

This paper makes a case for the use of design in business-to-business marketing. Although design most clearly is a competitive asset in consumer marketing, the vertical connections force upstream use of design. This development coincides and complements corporate and product branding, where design is seen as a way to verify and sustain the claims given in branding. Finally, the paper contains some steps towards the use of design in business to business.

INTRODUCTION

The importance of design has for long been recognized. Till now, however, design has primarily been associated with consumer markets. In this paper, we argue, in contrast, that this focus is misleading, and that design is equally, if not more important in business-to-business markets.

The argument to be advanced in this article is that design increasingly finds its way through the upstream vertical systems and will account for competitive behaviors in the business-to-business markets. The use of design is complementary to with increasing use of branding strategies. While branding strategies emphasis the use of communication in order to stress the values of the companies and their offerings, design is used to verify this claims in the form of user-centered products that are adapted to specific market segments and the way companies for instance in the mobile communication attempt at making their products lifestyle products by adding features that they believe the users require or find giving value. Customized covers, individual call tones, chat and SMS functions, information services etc are salient examples. Nokia, Ericsson and Siemens are current examples and it seems that the competition forces more to come. In particular the personal digital assistant (Apple's Newton, 3 Com's Palm Pilot, Psion, etc. are lining up for a future shake out)

The paper is mainly conceptual and uses examples from the telecommunications to argue its claims. There are no complete casestudies.

The problem we want to pursue is concerned with the common belief, that design as we define it is typically defined outside the scope of Business-to-business marketing. But if we regard the present competitive situation in, say, the market for cellular communication, design is probably the most important factor. Both companies like Nokia, Erickson, Motorola, SONY, and are competing on the end user markets – using both product and service design. The operators are pressing their service

differentiation, quality and value engineering to its limits. As parts of their offers, cheap phones from the major brands are often grossly under-priced, if the customers accepts switching restriction for a period. Our intent is to explore how the needs of design and the particular points of application follows the value chain in a backwards direction. Is it true, that if design is important on the consumer markets, then business-to-business markets, which are connected to these markets in a vertical manner, will be the next frontier of design competition. How should a producer who is really in a business - to - business market attempt to approach issues that happens at the consumer markets but seem to have such profound percussion

To clarify our point and explain our points of view, we first clarify the basic concepts to be applied in the discussion to follow. We then discuss how design can be applied in business-to-business markets. Here we also report research findings. After this, we extend our discussion in examining why and how design is applied in upstream business-to-business markets. We then extend our discussion as we examine when and how design and branding overlaps, and when design is beneficial in strategic management, (Rumelt 1985).

BASIC CONCEPTS

In this section we define our basic concepts to be applied in the following discussion. We define design as "a strategic process (Runco 1994, Dillon 1995) materialized in functional, sensory and expressive ordering". From this definition follows that design include 1) functional purposes, for instance a key purpose of a cup is to contain a fluid and make it available for intake, (Baxter 1995, Simon 1996). 2) Design also includes sensory aspects, e.g. the feeling of touching a cup, seeing it, how it preserves the taste of the liquid. 3) In addition design expresses something, for instance the cup belongs to a specific style for example "modernism", (Woodham 1997). Design often relates to branding. By a brand we mean "name, term, sign, symbol, or design, American Marketing Association quoted by Keller 1998, p. 2.

By branding we mean the process of establishing, maintaining, managing and profiting from brands (Keller 1998).

Design can be important in branding, e.g. by creating distinguishing characteristics. For example a cup from Wedgwood can easily be identified by its texture and its blue ornament can identify color and a cup from Royal Copenhagen. These identifying characteristics also enable the two manufacturers to differentiate their products (Tovey 1997).

Above, we used the term "business-to-business markets". By this term we mean markets characterized by derived demand, for instance the buyers in such markets primarily purchase products and services as inputs to conduct their business, and not for personal use. In the societal value creation process it is easy to identify multiple vertically organized intermediary markets. This can be illustrated in the following way:

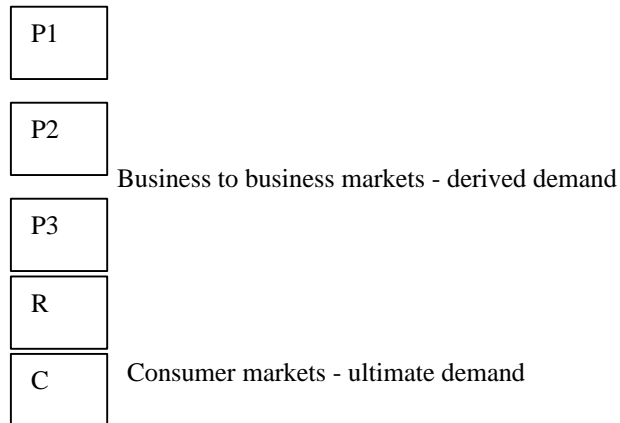


Figure 1. The marketing system

In figure 1, P1, P2, P3 represent the producers, R represents retail and C stands for consumers, i.e. individual and household buyers respectively. Figure 1. illustrate the organization of a vertically organized marketing system. The actors in the markets are linked through markets, "quasi-markets". All markets, except the R-C market in figure 1 are business-to-business markets.

THE USE OF DESIGN IN BUSINESS -TO-BUSINESS MARKETS

There are several strategic options for a company wanting to utilize design diligently. For example, a company operating as an original equipment manufacturer (OEM) would have at least three options, (Heskett 1999). Firstly, it could use design in its present situation. OEM's can use design to improve on their present deliveries as components and parts can often be improved. A small company that produces door handles to a large automobile producer found a way to improve the design of these handles much to the surprise of the very proficient and confident automobile producer. Secondly, an OEM producer may take the strategic move to become innovative; to become an original systems manufacturer (ODM). In such a situation, the company itself will decide specifications and use design in various ways. In innovative companies designer, engineers, marketing people and others typically form teams in order to take "deep dives" into specific problems and create innovative solutions, (Kelley 2001). In such situations, design is concerned with multiple assignments ranging

from systematic user studies to develop models and prototypes in cooperation with the other disciplines. Such innovations may be far reaching and require large investments. In order to capture the profits from innovations, companies go for the third strategic option, that of becoming an original brand manufacturer (OBM). This situation differs from the previous in the sense that innovation is followed by market development. To become a successful brand, large investments in market communication must be made. Often, the company itself is the object of the branding process, where intensive communication is used to position the company and its offers to the market. The design issues involved concern both graphic design aiming at the communication and product design undertaken in order to satisfy the expectations raised in the market. If the company is able to surmount all the possible traps, the result can be large cash flows. While corporate branding is of increasing importance, (Aaker 1993), we will be concerned mainly with product brands in this article. While aesthetic design dominates the consumer markets, it is more rare in the business markets. However, it seems that design is moving "upstream" in the value system, resulting in very similar design and therefore a broad definition of design (Simon 1996, Alexander 1964). The core of this development defines design in connection with strategic decisions and resource allocation more than the "traditional view" bases on design skills and aesthetics. We will look at a few examples and explain why this happens. The next section attempts to identify some dimensions of the products and markets in order to suggest a theoretical explanation of the patterns we are witnessing. It contains some empirical findings and their explanation.

SOME EMPIRICAL FINDINGS

Now we present some empirical findings illustrating some of the main points indicated above.

Based on two surveys of the Danish electronics industry in 1997³ and repeated in 1998 we identified two distinct segments of design use and position in the value system. One is the traditional business-to-business market where all business transactions take place as exchange between companies as upstream activities. Companies get their information from the customers from themselves. Rather than assuming, that all relevant market information is available from their transacting partner, they also instigate market research in the consumer markets. This way, the companies are less vulnerable to strategic information from their partners and they may become better at forecasting what will happen in the ultimate markets⁴. The other segments investigated concerns companies in the

³ The study has not previously been reported. Parts of it have been reported by Graca Maciel and Betina Astrup Clemmensen in their PhD dissertations in progress.

⁴ Q8 Petroleum is supposed to exist for this major reason. While the Arabic countries mainly produce crude oil, Q8 can provide unfiltered information about what goes on in the consumer markets.

downstream end, directing their business directly to customers or to retailing. In these cases, the information was also indicated the use of design for understanding the consumers. More interesting for our purpose was the picture also showed an increase in the number of upstream companies actually using industrial design for competitive purposes?

The Danish electronics industry is concentrated around medico-technique and telecommunication. Only very few companies are in the mass production of consumer goods.

Electronic products in general have short product lifecycles, usually less than three years. Also the profit is usually gained in the first 6 - 12 months of the product lifecycle. The time for bringing the product to the market is essential. Learning curve advantages and the ability to bring the "next generation" of a product to the market can pre-empt competitive situation. The time it takes to bring the product to the market is therefore of fundamental importance. Many firms try to find niches with longer design cycles⁵, (Utterback 1995). A longer design cycle can give the company longer time to profit from the markets. In these situations, the design quality and content become the major competitive issue. This is especially a concern for professional equipment for example telecommunication, medico-tech and computers for professional use. A large company like Grundfos, which produces pumps and other hydraulic equipment, uses design and input from design as important input. Another large company, Danfoss has used design with success over several years to improve user-interfaces in its.

Design seems to "trickle down", backwards in the value system. We believe this is because of the nature of the product and the markets between the successive links in the value system. Uncertainties and bounded rationality has a function in this, as we will see in the next paragraph.

UPSTREAM DESIGN USE

In this section we examine why design is applied upstream, that is design in business-to-business market and at an accelerating pace. First, we do not believe, that our findings represent a "special case". It is rather easy to notice that design is applied in business-to-business markets, and that design is applied continuously through the value systems. Why does this happen and how?

⁵ A design cycle (dominant design) may coincide with a product life cycle, but often it is shorter or longer. The general effectiveness of this is not the issue here and depends on a variety of factors in the market and the product technology.

If we assume the findings are general, we suggest, that design is integrated backwards (or upstream) in the value system. Then, we must ask why it is happening and how it happens. Is it a fad of little and brief consequences or is it the result of deliberate problemsolving activity in which intermediate markets would be an important frontier of utilization of design? An important reason for using design is differentiation. Demand is heterogeneous and users have different preferences and behaviors. They are also challenged by bounded rationality in their buying behavior (March 1985). Industrial buyers have, as other individuals' limited and selective memory. While the set of potential sources may be large, buyers attention and considerations are focused on only a few limited set of the restricted number of alternatives of which they are aware, "the evoked set". Most individuals can only remember a limited number of alternatives regardless of whether measured in consumer or business setting. Even, when we are dealing with an organizational "buying center", (Webster and Wind 1972) memory and the considered set of alternatives are limited. In order to be represented and "stick out" in the evoked set, it is essential to be remembered. This is vital in both the novel purchases and re-buy situations. Design can contribute to improve recognition and memory, and thus make remembering more easily and increase the probability of purchase.

Globalization brings new challenges. For example, the same technologies, distribution systems and media are available to all manufacturers. In addition, competition may arrive suddenly, as international competitor can set up their operation in our own neighborhoods. Differentiation can be based on technology, but only to a limit extent because the same technologies are available to all. Design is a good means of differentiation because it can take the users' point of view. Design serves differentiation in two basic ways. It can "**add value**" as it enhances the utility of a product as seen as a general generic product or commodity.

Design can also be "**value creation**" fully integrated in the product creation from its early conception. In such situations we talk about "radical" or "architectural" innovations, (Clark 1987). In these cases, the whole conception of the product either changes dramatically or it is completely new, for instance a SONY Walkman. IDEO Product Development invented the computer mouse as they were solving a man-machine interface problem for Apple. This was a radical innovation compared to the keyboard-only interfaces available at the time. Rather than remembering a large number or words of command, suddenly a click with the mouse could support easy visual access to complex interfaces.

Sometimes, the real decision-maker is not the expected one. IDEO conducted a number of user studies for Nokia⁶. They produced television sets and wanted a design input on the use of the

⁶ Based on a personal interview with Mr. Alan South, presently the head of IDEO Europe in London.

television-set. The design-team from IDEO found by careful observations, that the most critical situation was the sales situation. If Nokia wanted to be successful in this market, they should design television sets not for the consumer, but for the shop assistant. Studies in shops showed that the shop assistant is influencing the buyer by the choice of TV that is demonstrated. To become a favorite among the sales assistants, the TV should be designed in a way that makes it easy to demonstrate.

The Nokia design team later designed the 9000 Communicator as a combined communication and personal digital assistant (PDA) tool. Also here, designers put a very strong emphasis on the user and the situations in which they use this instrument. User-centered design then differs from customer-centered design.

Delia Vasques (1999) has researched the use and management of design in 4 UK super market chains. Her research shows big differences in the way design is used in the vertical system. Three of the chains had design departments making all important design decisions. In the last, Safeway, design was subordinate marketing. In all chains, design was seen as an important way of managing the private brands. For instance, most chains had both private and other brands and faced a balance issue in their portfolio. All of them, including Marks and Spencer used design to develop private brands that has significant resemblance with the leading brand on the market. For instance this was used in soft drinks. In particular the package, label, shape, colors and letters used were in some cases so close that the original brand owner had taken legal action. When the supermarket chains lost the cases, they still kept their brands close in appearance, but made changes in color, shape and letters still as close as they could without impinging the legal sanctions. The reason that Delia Vasques found was that recognition of some aspects of the original brand combined with a somewhat lower price and the supermarket brand was a very attractive business for the chains.

Sales of components and parts are important in many business-to-business companies. Also these companies can benefit from design, and they are often branded. "Intel inside" is a brand label to be found on many computers. The purpose is to signal to the computer manufacturer as well as the consumer, that there is a particular quality implicated. The Intel Corporation uses a pull strategy by signaling quality to the end-user. This also strengthens the company's bond with the computer manufacturers, preventing Intel's competitors to get access to the buying decisions of the computer manufacturer. This is made possible by design that is the Intel processor is compatible with the PC architecture in functional terms.

Corporate design is an important aspect of design in business-to-business markets. Companies invest in new corporate architecture (Walton 1986) and buy new interior and furniture and office equipment. The products are often similar to products in the consumer markets. Despite this for example furniture producers distinguish between consumer markets and the contract markets. Design is particularly important in the institutional market. Corporate communication and design is an emerging phenomenon. Firms use design strategically to unify their visual identity at all levels. This is done to express the values of the company in order to create general goodwill and thus prime future customers' expectations and willingness to purchase the company's product/service offerings, (Miller 1992). In particular this is the case when the transactions depend on expectations of the customer, like an experience good (for instance services). The goodwill can raise the expectation when the company introduces new brands and new products that consumers have little experience with (Brown and Dacin 1998). It is also used for internal purposes, to affect corporate culture in positive ways. Rather than imposing more control in the organization good design can enhance the *esprit de corps* and enforce self-policing by the employees (Miller 1992). All kinds of organizations seem to be moving in this direction. Included are companies that are doing business services, like transportation, cleaning, security, computer support and courier services use design with this double purpose. In a large company, the communication lines from the CEO are long and design supports this communication by creating a coherent context for the communication. The choice of corporate color is a way in which the company can signal whether it identifies itself as established and solid in which case dark shades of blue is commonly used. If environmental protection is urgent for the company image, green is used. If the company uses yellow, it usually means discount prices. Our own research in this field, (Kristensen & Sverdrup-Jensen 1999) that the perception of colors is context dependent and that the decision on company colors may be more difficult and less intuitive than often assumed by designers and architects. Our research findings have shown that a particular color, e.g. red meant different things for different companies.

DESIGN VS. BRANDING

As noted above, branding and design have a lot in common and they overlap. Design is a tool used in the process of branding. In this section we will compare design with branding and use this knowledge to develop a framework for the functions of design in branding. Our discussion above shows that design is used and can be beneficial for application in business-to-business markets. To do so, we introduce figure 2. The vertical dimension is the design dimension and the horizontal concern the brand elements. We are then able to distinguish between a number of products where design elements are either little present or much present. This gives us four possibilities:

	<i>Few design elements</i>	<i>Many design elements</i>
<i>Few brand elements</i>	<i>Screws, components</i>	<i>Crafted tools and furniture</i>
<i>Many brand elements</i>	<i>Fast moving branded goods</i>	<i>Electronics equipment</i>

Figure 2 Design and brand elements

The situation, where neither branding nor design is present is typical for screws, angles, tubes, "solid-state" components of which companies' uses in bulk quantities. We can identify a similar pattern with anonymous products used in everyday consumption. These items are produced in large quantities according to economics of scale. Only companies with large efficient facilities can qualify in this competition. Many firms try ways out of this risky and vulnerable situation. The typical way is differentiation. There are two typical ways. Either the company chooses to differentiate the product itself, which means using product design. In much business marketing this really means engineering design more than industrial design, but the borders between the two kinds of design is highly ambiguous. To add design elements means to design e.g. the material dimension to become more functional, to make it look better, to use a different material that changes the density and surface (tactility). We all have experiences with good practical furniture, household appliances etc. well-designed and yet anonymous products. Famous designers who did not want or see the point in identifying him or her, or the product otherwise have in fact designed some of them. In Finland a lot of furniture used in for instance schools and other institutions were designed by the famous Alvar Aalto and in Denmark schoolchildren have been able to "scrabble their doodles and initials" on furniture designed by Børge Mogensen. It can mean adding features and functionality to the product or a new package design. Such designs will make the individual product more appealing and functional for the user. Its appearance in the shop and the graphic design on displays facilitate recognition and preferences. The other way out of anonymity is to differentiate the offer by establishing a brand. It means to name the product, provide a benefit proposition, a sign or a symbol. Finally, overwhelmingly many products to the business markets are both well designed and characterized by strong brands, for instance tools. For instance Westinghouse, General Electric, Zanuzzi, Philips and Bosch has made a lot of user-friendly designs in freezing and cooling, Olivetti, IBM and Apple has done similar in typing and computing. Duplicators and copy machines have been subject for heavy competition in design by such companies as Gestetner, Rank Xerox and Canon. Areas such as medico-techniques (Philips, Siemens, Novo Nordic, Ely Lilly etc.), transportation (Pullman, Thyssen, Airbus and Boeing and Teague Design) use design extensively to improve

usability and appearance of their products. A current frontier of design competition is hand held computers or personal digital assistants, where technology seems to be subservient to design (Apple Newton, which is out of the picture, Palm Computing/3Com who to the lead, Psion, Erickson, Philips, Nokia are all in a pre-dominant design phase where the competition aims at winning the dominant design (Utterback 1995). These products are expected to generate enormous cash flows, as they will become part of the future communication and knowledge infrastructure of the future⁷.

When reviewing the literature on branding, surprisingly little is said about design. For example, the recent well-known recent book on branding, Keller 1998 has no direct references to design. Much of the content in this book has, however connections to design and we find, e.g. references to "positioning", "enhancing consumption experiences" and "corporate reputation". Design is in fact immanent in all of this, without being named. Kevin Lane Keller (Keller 1993, 1998) has approached branding by applying the "associative network model" of cognition⁸. The approach is concerned with knowledge represented by sets of nodes and links. A node connects information through associations. An established link can provide associations between product attributes and customer perceptions, connecting them with experiences, the consumer becomes aware of one or more brand elements in the form of recognition and image. The approach has a lot of potential and there is a good reason to proceed along these lines. How the nodes and links are created in the first place is seen as a "black box" and hardly spoken of. This is also where design fits in. The design is hidden in the "black box". Design is a process, as described above, undertaken by a designer who works with a company.

As noted above, the benefits can be categorized as functional, sensory or symbolic. In business-to-business markets all three types of benefits are present- and important. The functional benefits hardly need any explanation. Experiential benefits are vital in services, for instance transportation. Business travel is a competitive market and airline companies compete on offering competitive expectations and delivering convincing experiences. Design of all kinds of "user-encounters" is planned in detail. The competitive edge is often in the hands of the designers. In particular the combined functional and experiential aspects of long hauls business travel is the core example of this. The trip is minutely planned from the customer leaves home, gets to the airport, and is guided through fast lanes to the lounges and to the airplane. In the plane the interior and the services make the experiences. After the plane has landed, preferably on time reverse orders of event take place to bring the traveler/guest to a business hotel. Loyalty programs seek to establish a preference for complete packages. Symbolic

⁷ Recurrent features articles in business journals like Business Week repeatedly claim their success, not underestimating the fierce competition.

⁸ For comprehensive review of this cognitive theory and concurrent developments in cognitive research see Eich a. o. 2000

benefits are implied in the way business travelers are distinguished from tourists throughout the trip and given a priority treatment. Even differently designed baggage labels and gifts seek to establish a special identity for the business traveler.

HOW TO PURSUE DESIGN IN BUSINESS-TO-BUSINESS MARKETS

The use of design in business-to-business markets resembles the consumer markets and in fact the producers often market their products to both these markets. Many manufacturers of computer and information technology can use the same computer chip. This means, that this technology itself cannot sustain a competitive advantage for any particular company. Only the way the technology is adapted to user needs can provide for a sustainable competitive advantage. Let us suppose a company can choose between two actions. First, they can follow a low cost strategy, pursuing their strategic intentions and second, they can pursue a differentiation strategy and seek high quality, respectively. In both cases they need to be persistent with their intention. To switch from one strategy to another would require large adjustment and the costs would be likely to increase. In order to operate in the market, the company must signal the chosen strategy, (Mintzberg and Quinn 1985). In this situation, the low cost producer is favored if the market treats the product as generic (one market price. We assume that in the market all producers are (ex ante) seen as producing a generic product with identical quality. The "quality producing company" on the other hand, needs to be able to charge a higher price, since their unit costs are higher. Clearly the two companies have conflicting interests here. Let us see this from the point of view of the quality producer. If the company uses its preferred strategy it means that it would incur extra costs of superior products, communication etc. It also means that it would take a market share from the competitor, if and when some users would want a higher quality product. If the cost of communicating the company as a high quality producer and follow the differentiation strategy is less than expected retaliation from the competitor, then the company should follow this strategy. The retaliation depends on the losses inflicted on the competing company. The retaliation can be in the form of cutthroat price competition. Having invested in both high quality and design for communication this quality, the company may not have many reserves for such competition.

If the low cost competitor is seen as aggressive and as having big financial strength, the quality producing company may not want to challenge by designing communication, but rather use design to improve its quality e.g. product design and hope the customers will recognize and appreciate. By doing this, the product itself can communicate the higher quality without stirring up competition.

CONCLUSION

Our above discussion shows that design is used and can be beneficial for firms operating in business-to-business markets. For the firms design competence to be considered strategic, it needs to be able to influence its performance. Firms' competence in applying design can be considered a strategic asset when such an asset can influence the firm's performance, (Kotler and Rath 1985, Baxter 1995). The cellular phone market seems to indicate that quite clearly. Design competencies relates to insights into customer and user needs and practical problemsolving abilities (function, sensory qualities, and expression) Even an OEM producer can benefit from using design to cut costs and keep the customer's requirements. An ODM producer on the other hand can use design as a strategic tool to position the company and make product innovations in order to develop a new market and a completely new base for the company. A branded goods company is using design in order to keep their customers loyal. To keep the customers aware and to remind them about our brand is vital, as is also the use of design to create a good total customer experience.

We have made a case for the use of design in business markets. In particular is designing a tool in a branding strategy. The reason for companies to use a branding strategy is that any competitive market has a customer side. Customers have selective memories, have some preferences and they are affected by impressions from all communication channels.

The choice of a visible strategy rests on the economic argument that the marginal benefit exceeds the extra costs. A company in generic products may in fact be better off mass producing and selling. If on the other hand the products have some distinctive quality or the market seems to favor particular images, it is likely to payoff. This is also reflected in the increasing numbers of both product and corporate brands in the business markets.

Design is useful in both attracting new- and keeping the present customers. The relationship perspective focuses on the experiential dimensions of products and offerings. To attract new customers, a distinctive graphic design is vital. Together these design issues can improve the company's competitive ability.

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