

Strategic Design

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Long subsumed within more traditional functional departments such as R&D, marketing or manufacturing, design has often been considered an ancillary activity rather than a critical competency by top and middle management. However, in recent years this view has started to change. Design has begun to emerge from the shadow of these functional groups and forge a distinctive image as a separate and legitimate business discipline. Increasingly design is being recognized as a way of creating sustainable competitive advantage for the firm and contributing to value creation for stockholders (Durmaine 1991). With this emergence comes the need to define the strategic roles this discipline plays in the operation of contemporary business. In this paper we propose a set of "Design Strategies" and offer examples of how their implementation creates value for the firm and its stockholders. Because many of the best performing companies have moved to a process orientation rather than a functional orientation (Hammer 1996) we also identify which functional groups members of the design department must interact with in order to successfully implement each of the identified design strategies. We conclude this paper by considering what role designers and design managers might play in influencing the strategic decision processes at both corporate and business unit levels.

Design Strategy

Design, just as every other functional group within a modern business, has a set of responsibilities that while not necessarily their sole domain are by their nature chiefly theirs. Cooper and Press (1995) suggest that strategic design responsibilities can be broken down into three distinct sets of activities. These include: (1) the development of corporate identity, (2) the design of salable products, and (3) the design of operating environments. The decisions made by designers and design managers with regard to each of these issues has the potential to impact both corporate and business unit level strategies and ultimately helps to determine the degree to which

value is created or destroyed for stockholders. Design's contribution to the creation of value for a firm has been described through the term, "Design Equity." (Olson 1997). The basic premise underlying this concept is that innovative designs and the highly skilled designers and design managers that create them are assets of substantial worth and thus add value to the firm. As will be presented, design equity can be generated through the identification and implementation of each of the three design strategies previously described.

Design Strategy #1: Managing the Corporation's Communications and Identity

The goal of every designer involved in the creation or maintenance of a corporation's identity is to insure that the desired image is presented to and reinforced in the minds of those constituencies deemed important to the organization. Of-course there is an inherent dilemma in this responsibility. Corporations are entities comprised of many people, not all of whom share a common vision. The issue for designers to address is what image should be projected to the world. Because there are many voices within the organization it is difficult to determine who should actually set the standard. One source for this information is the corporation's mission statement. It becomes the designer's responsibility to convert these sometimes rather generic statements into images laden with meaning. Of course by tradition the CEO is the figurehead and spokesperson for most corporations. For designers this means working with him or her to incorporate their vision of the company into a distinct and attractive identity.

In terms of strategic options, corporate communications and image building can run from non-existent to outrageous. At one end of the spectrum, American Home Products is virtually unknown to consumers despite the fact that many of their products are in the cupboards and medicine cabinets of millions of consumers. For this company it is the product's image that is of critical importance, not the company spokesperson. On the other end of the spectrum, Chrysler became so widely associated with Lee Iacocca that it was mainstream news when he resigned from his position as CEO.

Another issue concerning the management of the corporate identity is determining if it is appropriate for a multi-industry conglomerate to have a single corporate identity. A classic example of this is IT&T which has over the years has been involved in producing shock absorbers and cup cakes, as well as offering financial services, insurance, and hotel accommodations, and once long ago, telecommunications equipment. As fascinating as some of their high technology products and services are, a high technology image does little to foster the wholesome image desired by most food producers. Thus a critical component in managing the corporate image is to determine whether to promote the corporation as a whole, the separate divisions, or just separate product lines.

The objective of corporate communication activities is to clearly and simply communicate the values held by the corporation to its stakeholders. While much of the discussion so far has centered on consumers, it is imperative that other constituencies such as employees, stockholders, and the general public be considered as well. Managing the corporate voice means that appropriate materials and information be presented in a timely manner to those separate groups. Employees require to know about company values and policies. These are critical issues because companies are made up of individuals whose efforts ultimately determine the success or failure of any enterprise. How these individuals feel about the company can determine the company's future by influencing the direction the company takes. Stockholders require to know about the operation of the company and that their money is being managed in such a way as to conform with their investment strategies. The general public requires to know that the company is operating in a manner that is not deleterious to their well-being.

To develop the proper corporate identity designers must work closely with personnel from the public relations, advertising, human resources, finance, R&D, and marketing departments. While the layout of materials such as annual reports, brochures, catalogs, and instruction manuals are largely the responsibility of designers, without the input of copywriters these documents are incomplete. And both groups need input from product development teams to understand the target markets, feature/benefit offerings, and distinctive advantages of new product offerings.

Design Strategy decision making in the area of corporate communications and identity involves understanding:

- * the corporate values and what to communicate
- * the relationship between corporate image and corporate goals
- * the design competencies necessary to design corporate communications and identities
- * the intangible messages which corporate communications carry.

To implement these strategic issues designers need to work with members of the public relations, advertising, human resources, finance, R&D, and marketing departments.

Corporate Communication Design Equity: Examples

An example of effective management of the corporate voice can be observed in the development of Caterpillar Corporation's corporate manual. Designers first had to understand what top management's vision of the company was, what the corporation's values were, and who the various stakeholders were. Designers then had to reflect those values through visual manifestations ranging from the images and text in their publicity to the design of their products to the hats worn on site. The skill in managing this corporate image has resulted in it being identified as a core competency and helped generate significant benefits for the company. Consumer goods such as hats, shoes, and shirts that sport a Caterpillar logo have become hot selling items. These products not only bring in additional revenues but they also provide the company with free advertising. The sale of these products also reflect the public's confidence in the company despite the nasty and protracted strike it incurred at its U.S. production facilities.

Another excellent example of how the design function has helped create a positive image for a company involved in a controversial industry can be seen in the creation of the Weyerhaeuser Company's logo. The Weyerhaeuser logo is both elegant in its simplicity and highly effective in demonstrating the company's core business--lumber and wood fiber based products. Its distinctiveness helps consumers readily identify Weyerhaeuser products. More importantly, the

logo reinforces the critical message the company has worked hard and long promote; that Weyerhaeuser is the "Tree Growing Company."

Design Strategy #2: Design of Salable Products/Services

A product designer's goal is to design high quality products. When we refer to "high quality" we mean: durability, ease of operation, aesthetic appeal, and consumer desired features. However, frequently there are further constraints or directives made upon the designer. Product designers are often asked to work within pricing constraints that allow finished products to be sold at specific price points for specific sets of consumers. This implies that quality is a relative term and that product designers must tailor their designs to meet the required level of quality for each price point the firm chooses to compete at. While obviously no one is going to promote the idea of designing low quality products, product designers must realize that only a small percentage of the world's population can afford the absolute, highest quality, products available. Most of the rest of us expect a certain level of quality that is commensurate with the outlays of money or other resources that we give up in order to acquire a specific new product. Of course standards can change over time and designers are probably at the epicenter when major consumer expectation paradigm shifts occur. Witness the in-roads Japanese automobile manufactures were able to make in the U.S. market when they began offering superior products at attractive prices.

Product design strategy then consists of assessing the price points for consumers the company or business unit has decided to target and then designing high quality products that can be produced within those pricing constraints. This is not an easy task. Witness Ford Motor Company's attempt to build a "world car." At a reported \$6,000,000,000 the Ford Contour is one of the most expensive cars ever developed. Clearly superior to the Tempo it replaced, Ford discovered to their great disappointment that initial sales of this superior product were well below those of the Tempo. Why? Because Ford added features that were, if not unwanted, deemed not worth paying extra for by the a large percentage of the target market (Wall St. Journal 1/11/96). Of course if Ford had managed to find a way to design such a car and keep its costs down they would

not have had to increase the price of the new model as much as they did nor would they have been forced to offer rebates to induce consumers to buy their cars.

Product design strategy decisions relate then to the ability to understand the market, in particular the stakeholder requirements of the product design, including the price and features and translate them into effective product design solutions. To properly design salable products and/or services designers must work closely with personnel from marketing, R&D, operations and to a lesser extent finance and accounting, in order to identify the proper target market, price points, product features, and production schedules.

A related strategic design decision design managers must frequently address is the issue of customized design vs. standardized design. The ability to standardize components through design sharing allows for significant costs savings in many industries. However, standardization can backfire. If consumers gain the impression that a product has become a commodity the appeal of exclusivity can be lost. While most of the world's consumers cannot afford customized products there is still the desire among many consumers to establish a unique persona. One way designers have sought to have the best of both strategic options is through the development of product platforms. A platform product such as Sony Corporation's Walkman series of portable electronic products allows for development costs to be shared over a range of products and serves as the springboard for the creation of a whole host of derivations aimed at the unique needs of specific target markets.

A final issue with regard to product design strategy is identifying what specific design objectives should be pursued? Cooper and Press (1995) suggest three. These include: (1) to reflect corporate values in product design, (2) to develop a consistent "design" across the product range, and (3) to define clearly through design the attributes of each brand. Translating these objectives into actions means designers should design products that are innovative, easy to use and maintain, reliable and durable. Designers need to develop a semantic that can form the basis of the complete range of a product group. And designers need to use those brand attributes that have been identified by marketing as a significant element of the design brief.

Design Strategy decision making in the area of the design of salable products and services involves understanding:

- * the relationship between the factors involved in product/service design, (product price/quality, standardization, etc.) and corporate goals
- * the design competencies necessary to design and deliver the planned products
- * the intangible messages which designed products and services carry.

To implement these strategic issues designers need to work with members of the marketing, R&D, operations and to a lesser extent finance and accounting departments.

Product Design Equity: Examples

Successful products are those that generate sufficient revenues to provide investors with profits at least commensurate with the risks incurred in their development. Good design can help insure this in several ways. First, products that feature innovative designs that provided actual or perceived customer benefits can be sold at premium prices. These high margins produce high profits for the firm and increase the market value of the firm. An example of this can be seen in the development of the line of Dodge, Plymouth, and Chrysler mini-vans. Despite the introduction of improved mini-vans from Ford, General Motors, Nissan and Toyota in recent years, Chrysler Corporation mini-vans continue to dominate the market and generate substantial profits for the corporation.

A second way in which designers involved in product development can create value for the company is through the development of a unique and identifiable style across the product range. Ford's introduction of the curvilinear Taurus brought on a revolution in automobile design. Hard edged lines gave way to fluid curves. While this style has influenced virtually every car maker on the planet, Ford is the one that benefited the most from it. The Taurus has become the best selling car in the United States. The success of this car has lead to design changes in other Ford models and helped boost Ford to become the best selling line of cars in the country.

A third way in which good design can create value for the company is through superior production design. By controlling production costs retail prices can be kept low thus providing a significant competitive advantage over competitors' offerings. Designers can help control production costs by designing production processes that achieve zero defects, by designing standardized components that can be shared across product lines, and by designing efficient production processes. Toyota has long been a master at each of these tasks.

Design Strategy #3: Design of Environments

Environmental design includes architecture, interiors, and landscaping. In recent years these design issues have become particularly important in service industries. A national, if not international, trend in retail has been the homogenization of retail outlets through the process of franchising. Nearly every town has its own McDonalds', GAP, Wal-Mart, and Starbucks. Regional distinctions are giving way to a national uniformity. However, intelligent environmental design offers the merchant the opportunity to stand out in a sea of conformity. It offers these companies the potential to differentiate themselves from their competitors. This trend is not limited to just traditional retailers. Financial services and leisure industries are also taking note of the competitive advantages well designed environments offer.

A second environmental design issue concerns the creation of corporate environments. The goal of every designer involved in the creation of corporate environments should be to ensure that their designs reflect the values of the corporation. The span of corporate environmental design is quite large. At the macro level this extends from the design of corporate headquarters to branch offices, from production facilities to retail outlets. At the micro level design issues extend from individual employee work stations to public reception areas and from internal decorations to external landscaping.

Environmental design has the potential to directly impact worker morale and productivity. This does not mean that facilities must be ornate, but they do need to be appropriate. For firms or business units following a low cost competitive strategy spartan facilities reflect a commitment to

that purpose. The message that management takes cost control seriously can be dramatically demonstrated when middle and top management's offices are also spartanly furnished.

Thus the specific objectives of environmental design strategies are to accurately reflect the values of the corporation and ensure customer satisfaction and employee morale and safety. To create these attractive, safe, and effective environments designers need to work closely with marketing, operations, and human resource personnel.

Design Strategy decision making for environmental (places) design involves understanding:

- * the relationship between corporate values, corporate image, the corporate environment and corporate goals
- * the design competencies necessary to design corporate environments
- * the intangible messages which corporate environments carry.

To implement these strategic issues designers need to work with members of the marketing, operations, and human resource departments.

Environmental Design Equity: Examples

Environments that enhance employee morale and safety and customer satisfaction are environments that create value for the company. Environmental design equity can be created in several ways. First, flexible facilities can be designed that allow a firm to conduct a wide variety of activities in a single structure. Multi-use facilities reduces overall development and maintenance costs and may allow for the quicker development of new products.

Second, attractive facilities are an important element in creating a desirable working environment. The market value of attractively designed facilities is greater and the ability to recruit and retain skilled employees is enhanced by providing an attractive workplace. An excellent example of this is Weyerhaeuser Corporation's world headquarters. Located in Federal Way, Washington, Weyerhaeuser's office buildings are set in a wooded stand of mature Douglas fir trees. The main buildings extend horizontally rather than vertically in order to blend with the forest

rather than attempt to overpower it. Windows dominate both the front and back of many buildings rendering them almost transparent. This design allows for the green foliage of the forest behind the buildings to show through and once again reinforces the image that the Weyerhaeuser Company is sensitive to environmental concerns as well as creating wealth for its stockholders.

However, this remarkable design is witnessed by only a small fraction of the people who buy or use Weyerhaeuser products. Consequently, the symbolism may be lost on many important constituencies such as members of congress who regulate timber practices and determine which federal lands are available for harvesting. But another important constituency, employees who work at the facility, are rewarded on a daily basis. The opulent wood paneling that covers many of the facility's walls helps to instill and reinforce the idea that the employees of this corporation produce attractive products that enrich all of our lives. The building's location in turn reinforces the idea that the world can simultaneously enjoy the forest and the bounties it provides.

Of course corporate environments extend beyond headquarters buildings. For designers involved in the creation of retail or wholesale environments the goal should be to enhance customer satisfaction and comfort. An example of this is the Byerly's chain of grocery stores in Minneapolis and St. Paul, Minnesota. Unlike traditional grocery stores where aisles are laid out exclusively in parallel or perpendicular rows, Byerly's stores are filled with little coves, islands, stores within stores, and a variety of interesting twists and turns. Unlike traditional grocery stores where your groceries is bagged and placed in a cart for the consumer to wheel to his or her car, at Byerly's your groceries are bagged and then placed in large plastic bins. These bins are taken by employees and sent down a concealed conveyer belt to other employees waiting outside. The shopper then simply drives his or her car to the covered drive-through loading docks, hands the attendant the bin identification tags, and then sits back as bag boys load the groceries into the car. No messing with shopping carts in the parking lots means having to spend less time outside which is very nice when the temperature hits 20 degrees below zero. It also means that the shopping carts are not wet and dirty when you select one in the store and that they are typically in good working order. This list of amenities could go on and on with a discussion on the lighting, the carpeting, employee

uniforms, the take-out deli, the post office, the restaurant, the chocolate shop, the liquor store, the crystal store, the culinary school, the card shop and the florist shop. The point is, that even rather mundane operations such as grocery stores can through innovative design be transformed into something special for consumers. The success of the Byerly's chain indicates customers in the Twin Cities are willingly pay a small premium for this unique grocery shopping experience.

Design's Role in the Adoption of Corporate and Business Unit Level Strategies

The second objective we seek to accomplish in this paper is to identify when and where designers can contribute to the formation and implementation of sound corporate and competitive strategies, specifically with an eye towards assisting firms in creating value for their stockholders.

Corporate Level

The basic responsibility of a CEO is to create stockholder wealth. This is most frequently accomplished by growing a company. We see two distinct ways in which design managers can assist CEO's in formulating good corporate level strategies.

1. Complementing the virtuous circle

Kotter and Heskett (Deschamps and Nayak 1995) found in a group of 200 companies over and 11 year period that the highest performing companies were those who paid balanced attention to three stakeholder groups, the customers, the employees, and the stockholders. Deschamps and Nayak (1995) described this as the virtuous circle. If management fails to insure that all three groups are satisfied the virtuous circle is broken. This breakdown hinders one or more of the group's abilities to perform at a high level which in turn causes the other members of the virtuous circle to suffer over the long run.

Because the design strategies previously described (i.e., corporate communications and identity, salable products and services, and corporate environments) impact on all aspects of the virtuous circle, strategic decisions at the corporate level must include strategic design decisions.

One corporate strategy for growing a company is internal development (i.e., new product or services development). Design managers are in perhaps the best position to assess the potential of new technologies for two reasons. First, designers tend to be closer to consumers than are the engineers that make-up most R&D departments. Second, they typically have greater mechanical skills than do most marketing personnel. They also have or have access to a "visualizing capability" which enables very raw product concepts to be visualized and tested with the product stakeholders. This puts them in an ideal position to assess just how consumers will use a line of potential products and whether the benefits offered by them justify the investment in them. Of course at this level of strategy we are talking about product lines or fields of technology and not generally focusing on a single product. The millions or even billions of dollars required to convert a basic science into consumer products in some fields makes this a corporate level strategic issue. The firm's design managers should be consulted on product strategies and the design competencies required to implement them.

A second way in which designers and design managers can affect corporate strategy is through the development of an appropriate corporate image. Developing that image means correctly managing the corporate voice. Packaging, advertising, logos, store layout, signage, branding, annual reports, letterhead, and intra-company communiqués are just a partial list of the items requiring the in-put of designers. While many of these activities are conducted at levels far below the top corporate ranks, they still significantly influence the public's image of the corporation. It is the designer who insures that all aspects of the business are consistently presenting the same and appropriate message.

Most of the design activities just mentioned are aimed at consumers or potential consumers. However, as Linda Keefe (1995) points out, how a company thinks about itself can determine the direction it takes. Managing the corporate voice also means directing the appropriate messages to the firm's employees. Internal communications, physical workspace layout, and quality of product offering all affect the attitudes of employees toward their employer.

2. *Developing and recognizing design as a core competence*

An alternative and one of the most common ways to grow a company is by acquiring other companies. While not universally true, it still holds that most acquisition efforts end in failure with the acquired company either being spun-off at a loss or after showing only modest returns on the initial investment (Porter 1987). These failures occur largely because no significant efficiencies could be identified that enhanced the operation of the two smaller firms in the newly reconfigured larger firm, and because the acquiring company often paid a hefty premium for the acquisition. This situation brings us to the specific role design managers might play in the process of formulating good corporate strategy.

As good design skills become more widely recognized as a form of sustainable competitive advantage (Durmaine 1991), firms that employ people who possess these talents have an asset that will not appear on any balance sheet. Top management of firms seeking to acquire other companies should seek the counsel of their design managers to assess whether the firms they are considering acquiring have either: (1) critical design skills that are not easily acquired in the marketplace that the acquiring firm could utilize, or (2) if the operation of the acquisition candidate could be improved significantly by it gaining access to the unique design skill base of the acquiring firm. If either of these two situations exists then value can be created for stockholders through the acquisition process. If no design synergy exists then it may be a signal that the two companies may be better off remaining as separate entities.

Business Unit Level

Designers and design managers can also have a direct impact on the formulation and implementation of business unit level strategies. How a business unit competes is, or should be, based on the resources available to the business unit and the competitive forces that exert pressure on it from outside the company. Using Porter's (1980) model for assessing industry attractiveness we can examine just how design resources can impact each of the five forces.

Well designed products can protect a business unit from several of these competing forces. First, a superior design by a manufacturer in an existing industry can discourage other companies that might consider entering that industry from doing so. Second, superior designs can reduce competition from buyers in one of two ways. Well designed products (i.e., those of high quality that provide the type of features consumers value) can be sold at premium prices allowing the firm to reinvest the profits into additional design improvements. In contrast, efficient production process design can help control costs. These savings can be passed along to price sensitive consumers. A third way in which well design products protect an existing company is by lowering or eliminating the price/performance benefits offered by products that employ substitute technologies. Hewlett Packard's superior ink-jet printers displaced industry leader Epson's dot matrix printers in a very short amount of time. Superior product design allowed HP ink-jet printers to produce sharper images in less time. Superior production design allowed the costs of ink-jet printers to approach the price of dot-matrix printers. Even though slightly more expensive, HP ink-jet printers provided significantly higher performance that helped large numbers of consumers justify the additional expense (Yoder 1994). Fourth, designers may have some impact over supplier's power. A good design may mean that components or raw materials used in the product may be acquired from a large number of suppliers thus reducing their power over manufacturers. On the other hand, a design that is good for the customer may mean that only a few suppliers of high quality components can meet the standards set by the business unit. In that case, good design may actually improve supplier power. Finally, well designed products help keep consumers loyal and prevent existing competitors from gaining market share at their expense.

By assessing the design skills, or lack there of, found in individual business units, general managers will have additional information on which to determine just how the business unit should compete. Of course all of these design related activities must be integrated with the efforts of other functional level managers and workers. Good design cannot and should not be expected to off-set shoddy business practices such as low quality production, inappropriate pricing structures, over engineering, sloppy book keeping, or excessive bad debt loads. A firm that cannot meet its debt

schedule is still bankrupt no matter how well designed its products, promotional materials, or facilities.

An example of this kind of miss-thinking occurred recently with Kmart. Over the past several years Kmart, the second largest discount retailer in the United States, has experienced severe financial hardships. During this same stretch of time Kmart's two chief rivals, Wal-mart and Target, have prospered. In an attempt to turn their declining fortunes around, Kmart's top management authorized the creation of a new logo. This new logo and accompanying color scheme were heavily promoted in a nation-wide, television advertising campaign that featured the company's CEO. In these advertisements the CEO talked about the new attitudes that could be found at Kmart and specifically commented on how much he liked the new logo. Unfortunately for the company (and the CEO who has subsequently been fired) the new logo and the red and gray color scheme said nothing to the consumer who upon entering the store found the same old troubled operation. While the design of the new logo did not appear to hurt the company, neither did it herald anything new. The corporation would have been better served by redesigning the layout of the stores and reconsidering their product offerings first, and then announce these changes in conjunction with a new logo and color scheme.

Conclusions

Every functional discipline within a modern corporation has at its core a number of specific issues that are, or ought to be, the decision domain of those persons who possess the unique skills of that discipline. We have identified three such strategic issues that we feel ought to reside chiefly within the decision domain of design managers. These include: the creation of the corporation's public and internal identities, the design of its product offerings, and the design of its environments. We collectively refer to this decision set as "Design Strategy."

Of course these issues will exist no matter what they are referred to. However, by identifying them as design strategies the discipline of design management benefits in two ways. First, other functional and upper-level managers will come to more fully recognize the importance

of, and critical contributions made by this still relatively young business discipline. Second, designers will develop an increasing awareness of the fact that their skills are truly business skills.

Of course we are not suggesting that design managers make decisions on any of these strategic issues in a vacuum any more than we would suggest marketing managers ought to dictate all aspects of new product development. Rather, we suggest that design managers are those persons who should be at the center of the decision processes on these issues. In addition, we believe that for the benefit of the corporation as a whole, design managers ought to be solicited for their input on both corporate and business unit level decisions. While we feel that companies that fail to solicit the opinions of design managers are overlooking a valuable source of critically important information, we also feel it is incumbent upon design managers to take the initiative to educate their non-design peers and superiors to the strategic value of the information they possess.

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