Creating Breakthrough Products

Innovation from Product Planning to Program Approval

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Chapter Three

The Upper Right: The Value Quadrant

Breakthrough products are driven by a complex combination of value attributes that connect with people's lifestyles. This chapter examines the seven attributes of value and introduces a Value Opportunity Analysis process. We then apply this process to the case studies introduced in Chapter 1. Every product development team must conduct a Value Opportunity Analysis, which evaluates the current state of products in the market and projects areas where the new product requires significant improvement. This is an essential step in any new product program. Failure to thoroughly and thoughtfully complete this phase will have a negative impact down the line. The goal is to create a baseline reference for determining directions for research and subsequent concept development that brings clarity to the Fuzzy Front End of the product development process.

The Sheer Cliff of Value—The Third Dimension

As you look through the Positioning Map diagrams shown in Chapter 2, note how the Upper Right is separated from the rest of the quadrants. The reason is not just to highlight the importance of this quadrant. As mentioned in the previous chapter, the Upper Right has a third dimension, as shown in Figure 2.2 (repeated here as Figure 3.1). Unfortunately, it is not as simple as just putting a technologist and stylist together to Move to the Upper Right. Products in the Upper Right are there because they add value to a product; we illustrate this in the 2D Map by separating out the Upper Right quadrant. Adding value is not a trivial process—it requires a strategic commitment from the company to a user-centered iNPD (integrated New Product Development) process.

Figure 3.1 illustrates our theory that the third dimension, value, only comes into play in the Upper Right. Chapter 2 showed that products in the other quadrants, especially the Upper Left and Lower Right, do provide some value by addressing either image or features. The Upper Right products, however, maximize image, features, and ergonomics, targeting a *significant* level of value that meets the needs, wants, and desires of consumers without sacrificing usefulness, usability, or desirability. Thus, products that fall in the other quadrants are on a different, lower level of value. The shift to the Upper Right is a dimensional change that is not gradual; rather it is abrupt and significant. In many ways it represents a sheer cliff, which we call the "Sheer Cliff of Value." Ascending this cliff requires a strategic approach to ascend that begins with commitment and planning and

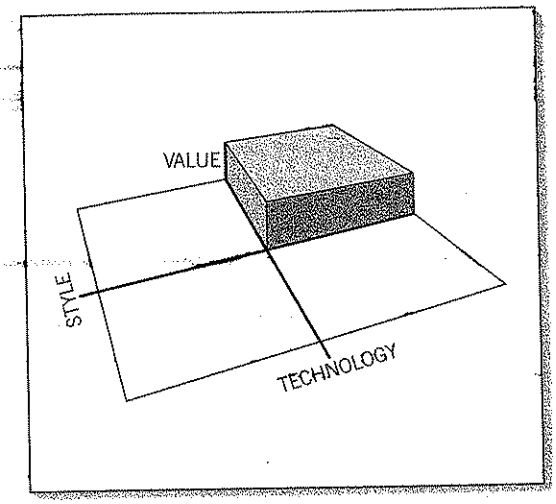


Figure 3.1 The three-dimensional Positioning Map showing the Upper Right Value quadrant.

ends with a user-centered integrated approach to product development. As discussed in Chapter 1, the product development process is akin to rock climbing. To create products in the Upper Right, you must climb the Sheer Cliff of Value.

In this chapter, we discuss customer-based value and show you how to use the concept of *Value Opportunity* to clarify a Product Opportunity Gap. Chapters 4 and 5 will then discuss the corporate strategy for committing to this process first by relating value to the corporate and product brand strategy and then by introducing a value-oriented product development process. The remainder of this chapter is devoted to understanding what value means in developing products for the Upper Right.

The Shift in the Concept of Value in Products and Services

■ Value in its true sense is lifestyle-driven, not cost-driven.

During the period of mass marketing, value was seen as the services or features a product provided for the price it cost. Good value was based on the lowest cost with the greatest number of features. The goal was to keep cost low, profits moderate, and sell in mass quantities. Products in the Lower Left are still driven by how many features can be delivered for the lowest cost. They are often sold in discount stores like Wal-mart and K-mart. Value in its true sense, however, is lifestyle-driven, not cost-driven. According to Webster's Dictionary,[1] value is the relative worth, utility, or importance of one item versus another; the "degree of excellence"; or something "intrinsically

valuable or desirable." Relative worth does not mean cost, but rather the quality that causes something to be perceived as excellent. From the perspective of a product, the key terms are *utility* (namely, usefulness and usability), *desirability*, and overall perceived *excellence*. A product is considered *excellent* when it is ranked high in all appropriate aspects of value, when it delivers the qualities people are looking for. For the purpose of the development of Upper Right products, *we define value as the level of effect that people personally expect from products and services, represented through lifestyle impact, enabling features, and ergonomics, which together result in a useful, usable, and desirable product.*

So a product is valuable if it is useful, usable, and desirable. Though not directly recognized as a definition of value, these words were first applied to product development by Fitch, a design consulting firm headquartered in Columbus, OH, to describe aspects of a successful product. A useful product is one that satisfies a human need, is capable of being produced at reasonable cost, and has a clear market. A usable product is one that is easy to operate, easy to learn how to operate, and reliable. Finally, a desirable product is one whose technology, function, appearance, and market positioning make customers want to own it. *Products in the Upper Right are useful, usable, and desirable*, i.e., have value in that they are perceived as excellent in a number of factors.

■ The cost to make a high-valued product increases less rapidly than the amount people will pay for it.

While cost is still an issue in the era of market segmentation, the more powerful factor is the consumer's need to connect their product purchases with their own personal values. When a product does connect, customers are willing to pay a higher price. People purchase products that enrich their experiences based on what is important to them, i.e., their values. The product must support that value base. The more the product does support that base, i.e., the higher its perceived value, the more people will pay for it. In the ideal case, and cases we have observed in practice, *the cost to make a highly valued product increases less rapidly than the amount people will pay for it!* In other words (as shown in Figure 3.2), the more value in a product the higher the price people are willing to pay, with the price increasing more rapidly than the cost. The profit is the price minus the cost, and thus the profit increases with higher value. The OXO GoodGrips adds so much value that consumers will pay several times that of the generic metal peeler. However the cost to produce it is not several times that of the generic counterpart, so the profit margin is significantly higher for the higher-valued product. This is also the case in SUVs. Although the SUV may cost twice that of the pickup truck whose platform it is built on, the cost to produce the SUV is not double that of the truck. The auto companies make significant profit on these high-value vehicles. (See Chapter 9 for a further discussion of SUVs.) This is the first way that Upper Right products lead to increased profit.

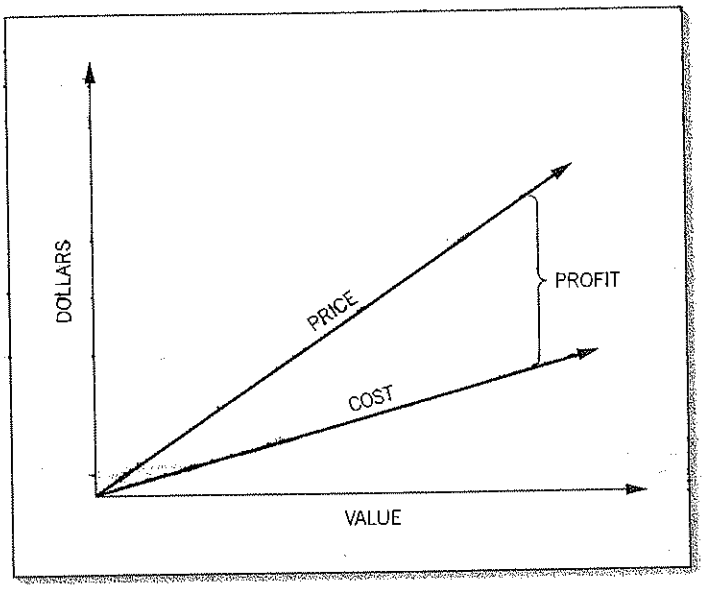


Figure 3.2 Price and Cost versus Value—Profit increases with added Value.

There are instances of high-value products that, due to manufacturing costs and the expenditure for emerging technologies, have a sales price that demands a lower profit margin compared to the cheap, poor-quality, competitor's product. But although proportionally they make less profit per item, they still make a large profit based on their increased sales price and resulting profit per item. This is the second way Upper Right products lead to increased profit. The Lower Left competitor or off-the-Map rip-off created by looking for the cheapest way to manufacture usually results in a poor quality product that may be churned out for a fraction of the Upper Right cost, but customers do not value their quality and will never pay a premium for this product.

The third way that Upper Right products lead to increased profit is by establishing brand, and thus customer, loyalty. Although not all Upper Right products will result in higher profit per item over competitors in the other quadrants, it is sometimes a strategic decision to produce an Upper Right product. This decision is made to establish a long-term relationship with the customer. Once an Upper Right product fulfills the expectations of a customer, he or she will be more likely to return to the brand for future purchases. As will be discussed in detail in Chapter 4, this happens because the product is the core of a company's brand strategy and the value of the Upper Right products help to establish strong brand equity. Strong brand equity means that customers are more likely to purchase your product over a competitor who has not established a core or appropriate brand identity. Not only will customers return to purchase

the next generation of the product they enjoyed, but when they eventually seek out new products, or higher value products, they will return to the company with that Upper Right product. This was the strategy Volkswagen used in the introduction of the new Beetle. The features and style of the product met and generally surpassed the value expectation of their customer. Although VW did not charge an exorbitant amount for the vehicle, their goal was to move customers into future, higher priced lines, such as the Passat, with future purchases. The same was true for the Mazda Miata, the PT Cruiser, and the Ford Focus. It is the current approach of Apple with the iMac enticing customers to move up to the G4.

The fourth way an Upper Right product leads to increased profits is actually by charging *less* than the competition! An effective process of integrating engineering and design can lead to products with fewer parts and a more efficient process of manufacturing and use of finishes. These products end up costing less to produce than the previous solutions. Sharing that cost reduction with the consumer makes a strong statement for enabling market penetration. It also establishes a strong brand equity built on innovation and cost reduction. Although this enviable position is not easy to come by, the attention to detail that results from creating an Upper Right product can have surprising ramifications. Dell Computer developed a system for innovation in product customization and delivery that allowed them to acquire a strong share of the market yet keep their products at competitive prices.

Qualities and a Customer's Value System: Cost vs. Value

Consumers have come to expect a high degree of quality in the products they buy. Quality tools and programs such as TQM, QFD, 6σ, and ISO9000 have continued to raise the bar on the quality of manufacture and product performance. These attributes have become the expected baseline of entry into a market. What makes a product successful in the marketplace today, however, is determined by the qualities it represents and how these product qualities connect to personal values. Product qualities result from the combination of image, features, and ergonomics.

B. Joseph Pine and James Gilmore describe the emerging economy as the "experience economy," one where companies will succeed by producing or supporting experiences.[2] According to Pine and Gilmore, commodities lead to goods, which in turn lead to services that are now leading to experiences. These experiences are a new source of value for the consumer. What is striking in their research is that each progression has led to higher pricing of the product (Figure 3.3). Commodities provide the means to create goods that provide services that, together with goods, stage experiences. There is as much as an order of magnitude increase in price between goods and services and experiences. In other words,

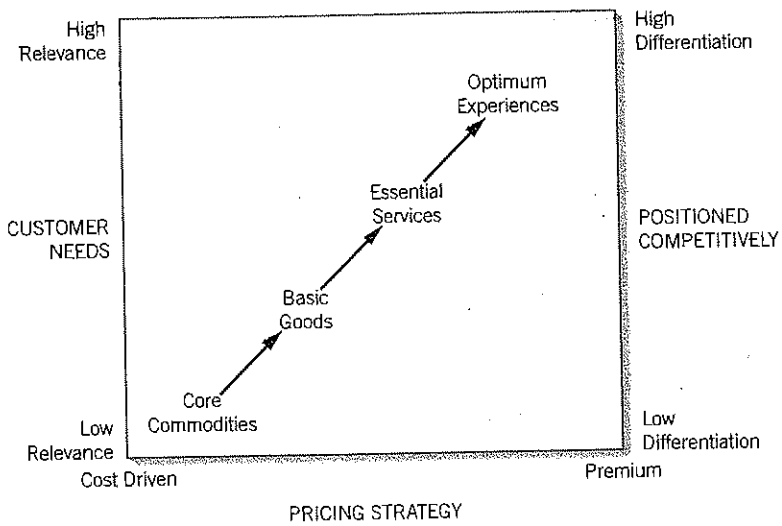


Figure 3.3 The progression of economic value from core commodities to optimum experiences (adapted from *The Experience Economy* by Pine and Gilmore[2]).

people will pay, and pay highly, for quality experiences. Figure 3.3 also shows how those companies that provide experiences differentiate themselves from the competition.

As stated earlier, it is no longer form following function. That has been replaced by *form and function fulfilling fantasy*. The shift from the industrial revolution to the information age is also the shift from the world of high work ethic and low fantasy expectations to the world of work as a means to provide for an ever-increasing array of fantasy expectations. Customers expect a product to enhance and fulfill their lifestyle, both physically and symbolically. In short, people want to fulfill their dreams. But what one group fantasizes about as an ideal product is different than another group.

In the 20th century, the entertainment industry has created a world culture of fantasy. Movies, television, books, vacations and products are all attempts to live up to customer dream expectations. Vacation resorts like Las Vegas and Disney World or cruises to natural settings bring fantasy into experience. People all over the world want to experience that level of fantasy. They want to extend that fantasy into every phase of their lives. Think about the influence of the *Star Wars* series, *The Matrix*, and *Star Trek* on products, fashion, and digital imaging. We now have products that look like three-dimensional cartoons (like Graves products for Target) and cartoons that look real (like the toys in *Toy Story*, where the Buzz Lightyear action figure toy is created from the same type of digital representation used to create the cartoon character in the movie). We can watch videos while driving, talk to anyone anywhere in the world, and we have on board navigation systems telling us where we are on the planet at any moment in time and where to go next to arrive at our destinations.

■ The Upper Right represents the products that support the new experience economy.

In the Upper Right are those products that differentiate themselves from the competition by enhancing experiences. In other words, the Upper Right represents the products that support the new experience economy.

The argument for the experience economy is also presented by Rolf Jensen in *The Dream Society*.[3] Jensen argues that the information society will give way to the dream society (or we would say, the "fantasy" society). The future economy will be based on companies' ability to tell and sell stories. Our approach is to understand peoples' fantasies (or dreams) and to create products and services that create experiences closer to those dreams.

As consumers become more sophisticated in their ability to select products and their fantasy expectation increases, companies must learn to understand the new value structure of their core customers. Though aspects of this value system are deep-rooted, from religious and righteous beliefs, much of the system changes rapidly as people mature. Culture and trends shift faster and faster in more and more product markets. Thus successful companies must see the process as dynamic and constantly update their understanding of who their customer is. Connecting product qualities to the value system of customers is the new method for creating successful products.

Arguing for value-driven products over cost-driven products does not mean that price is never an issue. Pine and Gilmore state "no one repealed the laws of supply and demand. Companies that fail to provide consistently engaging experiences, overprice their experiences relative to the value received, or overbuild their capacity to stage them will of course see demand and/or pricing pressure"[2] (p. 24). In other words, people have a capacity that limits what they can afford. The point is that people will pay for value beyond what they pay for commodities. But the key is to understand what that limit is and what a given market looks for in a product, and then to add in the *right* features for the *appropriate* value.

We call this *psycheconometrics*. Psycheconometrics is the psychological spending profile of a niche market. It determines what people perceive is worth spending money on. The user experience is enhanced by the value people feel they are paying for.

Clearly the SnakeLight adds value and enhances experiences beyond the basic flashlight, Starbucks provides a richer experience than the local diner, the GoodGrips boosts the cooking experience beyond the generic peeler, and the Talkabout enhances communications beyond the walkie-talkie. People have paid a significant cost increase for the added value of these experiences. It has been argued that if there are two identical products on the market, then won't the one that costs less succeed? We respond that in practice there are no two identical value-oriented products on the market. Two different companies or divisions create differences in the products through brand equity, if not through differing features. Why do people shop at Tiffany's when they can buy similar jewelry at a lesser price in the local jewelry store? The answer is that

Tiffany's provides a shopping experience and a story for the customer to tell. The Tiffany's experience helps people feel better about themselves and people are willing to pay for that.

If, however, you are going to charge more than the competition, then the customer better perceive that the added value is worth the additional cost. If the product does not add value, then as a higher cost commodity it will fail. Manufacturing commodities is still an option, but it must be recognized that you are creating Lower Left products and price becomes the purchasing driver.

Value Opportunities

Value can be broken down into specific attributes that contribute to a product's usefulness, usability, and desirability, and connect a product's features to that value. Since products enable an *experience* for the user, the better the experience, the greater the value of the product to the consumer. In the ideal, the product fulfills a fantasy by facilitating a more enjoyable way of doing something. We have identified a set of opportunities to add value to a product, called *Value Opportunities* (VOs). These seven Value Opportunity classes—emotion, aesthetics, identity, ergonomics, impact, core technology, and quality—each contribute to the overall experience of the product and relate to the value characteristics of useful, usable, and desirable.

The VOs differentiate a product from the competition in the way that people's needs, wants, and desires influence the purchase and use of that product. The VO is a snapshot in time. What makes one set of VOs relevant today, due to the current analysis of SET Factors, may make the same VOs irrelevant tomorrow. Also, interpretation of the VOs is based on the SET Factors for a target market; what attributes one group finds important may be uninteresting to another.

The ergonomics, core technology, and quality Value Opportunities each address the satisfaction of the product during use, both immediately and long-term. The social and environmental impact, product identity, and aesthetics VOs each address lifestyle aspects of the consumer. The emotion VO connects most directly with the consumer's fantasy in using the product. Together these VOs define the third axis of the Upper Right, the value of the product to the consumer. In examining each of these in more detail, recognize that each affects a product differently. Although each is broken down into specific Value Opportunity attributes, this breakdown can be augmented as needed. For as cultural needs change, new value needs will emerge. This list, however, is fundamental and will generally support the analysis of value for most product classes, including all of the products discussed in this book.

The VOs are an extension of the breakdown of value in Chapter 2 as lifestyle impact, features, and ergonomics. Lifestyle impact represents the emotion, aesthetics, identity, and social impact Value Opportunities; features represent the core technology, quality, and environmental impact VOs. In the last chapter, we argued that all and only those Upper Right products are strong in all three categories. Although all Value Opportunities may not be targeted by an Upper Right product, at a minimum one relevant VO attribute that falls under each category must be targeted for a product to exist in the Upper Right. Of course, the more VO attributes that are targeted and maximized, the stronger the product's place in the Upper Right will be.

Emotion

The first Value Opportunity is *emotion*. All of the Value Opportunities support the product's ability to contribute to the user's experience, however emotion defines the essence of the experience; the emotion contribution defines that fantasy aspect of the product. For our purpose the emotion Value Opportunity is the *perceptual experience* of the consumer when using the product. Different fantasies distinguish different products. We break the attributes of emotion into:

- Sense of adventure: the product promotes excitement and exploration.
- Feel of independence: the product provides a sense of freedom from constraints.
- Sense of security: the product provides a feeling of safety and stability.
- Sensuality: the product provides a luxurious experience.
- Confidence: the product supports the user's self-assurance and promotes his or her motivation to use the product.
- Power: the product promotes authority, control, and a feeling of supremacy.

Think about the sensual feeling of sipping a cup of coffee at a Starbucks in Manhattan on a cool Fall day. Consider the feeling of confidence and security in picking small parts in a warehouse using the Crown Wave. Think about the sense of security and independence that families have when communicating with the Motorola Talkabout on the ski slopes in Tahoe. Products can utilize more than one emotional attribute toward value. This will be true for each Value Opportunity. Although some products succeed by focusing on key attributes, the more relevant attributes of each VO that can be targeted, the higher the likelihood that a product will add value to a target market. Each Upper Right product captures a range of VO attributes, as will be shown later in this chapter and in Chapters 8 and 9.

Aesthetics

- Stimulating as many senses as possible through the use of a product builds a positive association between the user and the use of the product.

Aesthetics, the second Value Opportunity, focuses on sensory perception. The five senses are all important attributes of this VO. Many products only focus on visual and tactile senses. However, stimulating as many senses as possible through the use of a product or environment builds a positive association of the product with its application. This provides an exciting opportunity to add value to a product if competitor's products lack this focus. The range of senses involved with aesthetics supports the emotion Value Opportunity, especially the sensuality attribute. The aesthetic attributes are:

- Visual: The visual form must relate shape, color and texture to the context of the product and the target market.
- Tactile: The physical interaction of the product, primarily focusing on the hand but also including any other physical contact between the product and user, must enhance the product experience.
- Auditory: The product must only emit the appropriate sounds and eliminate undesired sounds.
- Olfactory: The product must have an agreeable smell, providing appropriate aromas and eliminating undesirable odors.
- Gustatory: Products that are designed to be eaten, used as a utensil, or may otherwise be placed in the mouth (e.g., a child's toy) must have an optimum flavor or no flavor at all.

Product Identity

Products in the Upper Right make a statement about individuality and personality, expressing uniqueness, timeliness of style, and appropriateness in their environment. The identity of the product supports the emotion VOs and the consumer's fantasy in owning and using the product. The identity of the product also supports its brand identity (see Chapter 4). Three attributes of product identity are personality, point in time, and sense of place:

- Personality: The two main issues in a product personality are 1) the ability of a product to fit among yet differentiate itself from its direct competition, and 2) the connection that a product has to the rest of the products produced by that company.

In order for a product to be successful, it has to capture a point in time and express it in a clear, powerful way.

- **Point in time:** In order for a product to be successful, it has to capture a point in time and express it in a clear, powerful way. Point in time is a tricky combination of features and aesthetics.
- Sense of place: Products must be designed to fit into the context of use.

Impact

A company has a number of ways to demonstrate that it can be a responsible manufacturer and respond to socially oriented issues. Social responsibility is connected with the customer's personal value system and, as discussed in Chapter 4, can often build brand loyalty. Charitable donations, safe work environments, and health- and family-oriented benefits all promote the corporate image. The company, however, can positively affect society through the product itself. Based on consumers' preference to buy products that benefit rather than hurt the environment or social groups, opportunities exist to add value to a product through social and environmental impact. Products can also have social impact by effecting changes in how people communicate and interact with each other. This Value Opportunity and its related social and environmental attributes are probably the least explored of all the VOs. Yet they continue to have a growing effect on product development.

- Social: A product can have a variety of effects on the lifestyle of a target group, from improving the social well-being of the group to creating a new social setting (see sidebar).
- Environmental: The effect of products on the environment is becoming an important issue in terms of consumer value. Design for the environment, or "green design," focuses on minimizing negative effects on the environment due to manufacturing, resource use of the product during operation, and recycling (see sidebar).

Ergonomics

The next Value Opportunity focuses on usability. Ergonomics refers to the dynamic movement of people and their interaction with both static and dynamic man-made products and environments. The terms *ergonomics*, *human factors*, and *interaction* are all related and will be discussed in Chapter 7. Ergonomics has both a short-term and long-term effect on the perception of a product. Consumers look for comfortable

Social Impact VO

Both social consciousness and social interaction provide opportunity for added value in a product. Three products highlighted in this book that have a strong effect on social well being are DynaVox's DynaMyte augmentative communicator, designed by Daedalus Excel, which enables people who can't speak to communicate (Chapter 8); the Baygen Freeplay Radio, which allows people in underdeveloped regions without electricity to use a radio to obtain news and health bulletins (Chapter 8), and the OXO GoodGrips, originally designed primarily for elders with arthritis. The GoodGrips, however, was designed and marketed for almost any individual to use. That objective is known as *Universal Design* (sometimes referred to as transgenerational design), an extension of the Americans with Disabilities Act (ADA). The ADA is usually discussed in terms of access to buildings and the ability to maneuver in public spaces. Designers like Pat Moore have crossed these bounds through the design of products and interfaces.[4,5] The goal of Universal Design is to make products useful and usable to the broadest range of users. The rule of thumb when employing a philosophy of Universal Design is that companies should never knowingly design a product that prevents a significant percentage of consumers from using it in normal operation of intended use. It is easier to design for broad use of a product if it is a priority in the early stages of a design. The reason OXO GoodGrips has been so successful is that it embodies the philosophy of Universal Design by clearly demonstrating that a product developed to respond to people who are physically challenged could work for everyone without stigmatizing anyone.

Other products may not target social conscientiousness directly, but still affect the interactions among people. Starbucks created a non-alcoholic way for people to meet and enjoy each other's company in a public setting. The Talkabout enables groups to stay in contact even when physically apart. The Crown Wave changed the attitude of the workers that use it; they now actually enjoy work that used to be stressful, tedious, and dangerous. And they are now in a better position to interact with, rather than avoid, customers in a warehouse environment. Even Harley-Davidson created an entire new subculture of social interaction. While the Harley was once associated with a criminal fringe lifestyle, the company has refocused its brand and extended its product line. Today white collar workers escape the 9–9, Monday–Friday grind and transform themselves on weekends by joining Harley Clubs that ride in full Harley attire. The Harley motorcycle, the core product, and all of its accessories create an environment that fosters a sense of comradery and escapism. (See the case study in Chapter 4.)

fit and intuitively simple controls in a new product, but a product must also hold up over time in comfort, consistency and flexibility in use. The ability of a person to interact with a product with ease, safety, and comfort contributes greatly to its overall value. These three attributes of ergonomics are also the attributes of the Value Opportunity:

- Ease of use: A product must be easy to use from both a physical and cognitive perspective. A product should function within the natural motion of the human body. The ergonomics of the size and shape of components that a person interacts with should be logically organized and easy to identify, reach, grasp, and manipulate.

Environmental Impact VO

Design for the environment, or "green design," presents an opportunity to improve product value with very broad societal implications. Black & Decker is beginning to make their products recyclable. Herman Miller, in chairs designed by Tom Newhouse, now lists materials in the recycling information on the bottom of the chair. Companies like Ford are openly struggling with the balance between their environmental concerns and the performance of their vehicles. Many companies in the U.S. lag behind Europe in terms of concern for environmental impact. Consumer attitude and government regulations, however, are both leaning toward more stringent requirements (government) and expectations (consumer) for environmental friendliness. This Value Opportunity, still ignored by many companies, provides another opportunity for differentiation from the competition.

In Europe, legislation towards mandatory take-back of durable goods at the end of their lifecycle requires companies to consider issues of disassembly and disposability. At the same time legislation that durable goods must be built with a specific recycled content (around 85% with an increase up to 95% scheduled) focuses the design of products with great reference to the environment. In the U.S., no such legislation exists. Thus use of recycled components and materials, and recyclable components and materials, are limited. In the U.S., however, autos do have a reasonably high (75%) use of recycled materials by weight, with steel and aluminum in particular being processed from scrap. Nonetheless, this decision in the U.S. is purely cost driven; it is cheaper for companies to use recycled steel rather than use virgin steel. The opportunity is here for more focus on green design and the related consumer awareness of the effort.

As Europe moves toward a higher percentage of recycled components in durable goods, they are exploring the idea of selling a service rather than a product. For example, car companies are considering primarily leasing or even just loaning cars that are mostly refurbished. Instead of trying to market a car as new that is mostly filled with re-built parts, they would provide the car as a service just as copier companies do with their machines. Rent, repair, and Web access are all means to make money off the service of the vehicle, and the problem of take-back disappears.

Bosch, an international company, makes automotive equipment, navigation systems, home appliances, industrial equipment, and power tools. The company is proud of its environmental approach to the design of its products. Their design strategy takes into account aspects of the environment such as choice of material, disassembly sequences, and separation of material in their products. One aspect of their business is the sale of refurbished power tools. Many customers like to trade up to the newest models introduced. Bosch will take back the older tools and either recycle them (since they are designed for disassembly) or resell them after refurbishment. It turns out that many tools have only been used for a short time. Those are the tools best suited for resale. Bosch has introduced a chip into the tool that records parameters indicating how many times a tool has been used and under what conditions. By processing that information, they can refurbish tools and sell them for additional profit, rather than dispose of them.

- Safety: A product must be safe to use. Moving parts should be covered, sharp corners eliminated, and internal components shielded from users.
- Comfort: Along with ease of use and safety, a product should be comfortable to use and not create undo physical or mental stress during use.

Core Technology

As aesthetics and personality target the style aspects of the Positioning Map, the core technology and quality Value Opportunities target the technology aspects. Technology alone is not enough, but technology is essential. It must enable a product to function properly and perform to expectations, and it must work consistently and reliably. People may want more than just technology, but they expect technologies to evolve at a high rate with a constant increase in functions that are better and more consistent.

- Enabling: Core technology must be appropriately advanced to provide sufficient features. Core technology may be emerging high technology or well-manufactured traditional technology, as long as it meets customer expectations in performance.
- Reliable: Consumers expect technology in products to work consistently and at high level of performance over time.

Quality

Products should be perceived to be of high quality when purchased and they should meet those expectations over a long period of time.

The final Value Opportunity is quality: the precision and accuracy of manufacturing methods, material composition, and methods of attachment. Although related to technology, the focus here is on the manufacturing of the product itself—not the process, but the expectation of the process. Products should be perceived to be of high quality when purchased and they should meet that expectation over a long period of time. This value is measured by the sound a door of a car makes, the seams connecting two plastic parts of the computer monitor, or the way the rubber sleeve attaches to the head and tail of the SnakeLight. Although not an easy task, manufacturing technologies and assembly methods have progressed to the point that this goal is obtainable. A major argument of this book is that by spending the time up front to create a product that meets customer expectations, the downstream manufacturing detailing becomes more straightforward. By including manufacturing in discussions early in the process, potentially costly defects can be caught and dealt with early before economic investments in molds and assembly. The quality VO is broken down into two attributes:

- Craftsmanship—fit and finish: The product should be made with sufficient tolerances to meet performance expectations.
- Durability—performance over time: The craftsmanship must hold up over the expected life of the product.

Value Opportunity Charts and Analysis

We use the Value Opportunities to evaluate how products successfully Move to the Upper Right. Figure 3.4 shows a Value Opportunity Chart. The chart lists each Value Opportunity class and its attributes in a column. The values are measured in a qualitative range and are expressed as low, medium, and high for each attribute. If a product did not meet (or target) any level of that attribute, no line is drawn. (There is an assumption that if there was any intent to focus on an attribute, then there would be at least a low measure of success; if not, then the blank line indicates failure.)

Below the chart are listed *profit impact* (across the company), *brand impact* (on company brand), and *extendable*. Although not VOs, they are included in the chart because they indicate the overall success of the product. A product in the Upper Right produces profit

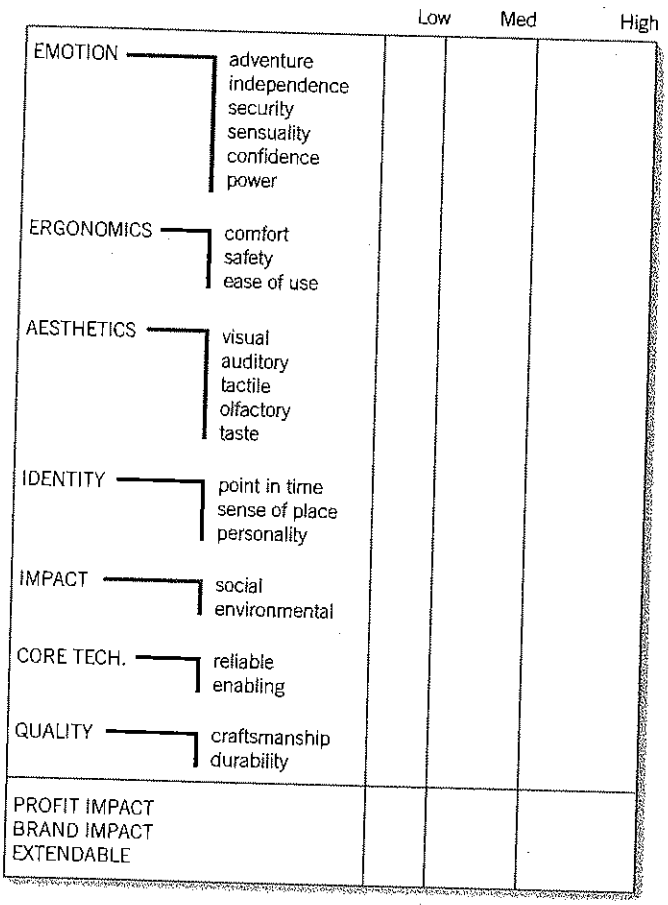


Figure 3.4 Value Opportunity Chart.

in a number of ways. The argument is that products may cost more but people will pay for value. Companies can increase market share and gain stockholder and investor confidence. They can generate sales that are greater than other products in the company or significantly add to the existing product lines. They can increase the equity of a brand and/or broaden the equity by moving into new desirable markets. Companies like Mercedes have always enjoyed greater profit margins. Sam Farber, founder of OXO, has stated that one of the major challenges a company has to meet is to determine the potential overall profit of a product that will cost more to produce and will need to be priced higher than the competition. It takes the combined insight of the team and management with the appropriate feedback from customers to make this decision. It has been said that only one company can be the cheapest; the rest have to compete using design. We would add that they must compete using integrated design that produces value.

People we have interviewed from various industries note that companies often make a "safe" decision and let spreadsheets and cost reduction become the primary ways to increase profit. While these approaches are sound, they can actually backfire and have a short-term payoff with a long-term negative effect. As price stays the same and profit is generated through reduction in parts, cost, labor, and steps in manufacturing, companies can start to lose the ability to be innovative. They lose sight of the competition and emerging trends. Companies have to learn to balance innovation risk management with conservatively tested measures of cost controls, carryover, and parts reduction. Developing a new product without significant innovation is a bigger long-term gamble than investing in an innovative product that brings new product attributes to the marketplace. Creating a stable platform and then using mass customization to create the proper style and feature interface is one method to accomplish this. Swatch Watch, Nokia, and VW have been successful with this approach. Establishing a consistent approach to product development and then applying it creatively in different products is another. OXO, Polaroid, and Tupperware have been successful developing new products with this technique.

■ A strong product and corporate brand means a higher likelihood of repeat business to the company and a higher price that the product commands.

Having maximized their Value Opportunities, products in the Upper Right have a strong brand identity and can have an even greater impact on the corporate brand. As stated earlier and discussed in more detail in Chapter 4, although there are many important factors that form the brand strategy of a company, the product or service must be core to the process. Upper Right products and services have a strong brand impact at the corporate level, while products in the other quadrants tend to either be nondescript (Lower Left quadrant) or have heavily biased brand impact from aesthetics (Upper Left quadrant) or technology (Lower Right quadrant). A strong product and corporate brand means a higher likelihood of repeat business to the company and a higher price that the product commands.

Products in the Upper Right often lead to expansions into other versions of the same product or other product lines. The GoodGrips handle is now used in over 350 products including pizza cutters, knives, and gardening tools. Starbucks has expanded in number of store locations, but also environments where their coffee is sold and product types (such as ice cream) that focus on coffee. Lack of extendability will not prevent a product from Moving to the Upper Right, but the Value Opportunity attributes are generally so strong that such extensions are natural.

■ Understanding how previous products failed, when focusing on the target market, allows you to discover how much better your product is—or should be.

The chart of a successful product is useful in trying to understand what Value Opportunity attributes the product team targeted and how well the product turned out. However, the chart is most useful as a comparison against competitive products. In the Value Opportunity Analysis (VOA), one chart indicates a pervious product or solution to a task, while the other represents the product of focus. In many ways, this analysis is easier than when considering a product alone. Understanding how previous products failed, *when focusing on the target market*, allows you to discover how much better your product is—or should be.

We now apply a Value Opportunity Analysis to the GoodGrips, Talkabout, Wave, and Starbucks.

VOA of OXO GoodGrips

First consider a Value Opportunity Analysis of GoodGrips versus the generic metal vegetable peeler (Figure 3.5). From a Value Opportunity perspective, the generic peeler ranks low in the emotions of independence and confidence, and meets a low level of each ergonomic attribute. The main things going for it are that it lasts forever (durable) and has reasonably good reliability and craftsmanship. Due to its cheap price, there is very little profit per item. Companies that make the generic peeler make money through high sales volume. Although the peeler has been around for over 100 years, its generic form is made by many nondescript companies and it has not led to any further product lines.

The GoodGrips excels in its ability to meet strong emotion VOs in independence, confidence, and even security, especially for the original target market of elderly or arthritic users. The product also excels in all aspects of ergonomics, identity, core technology, and quality. The GoodGrips has very strong social impact which stems from the success of the handle that enables people to hold the product with a greater sense of security. Finally, an additional part of its success is the result of the highly refined visual and tactile aesthetics. A comparison of the VO Chart for the GoodGrips and the generic peeler explains how OXO is able to charge several times the cost of a generic peeler with great success.

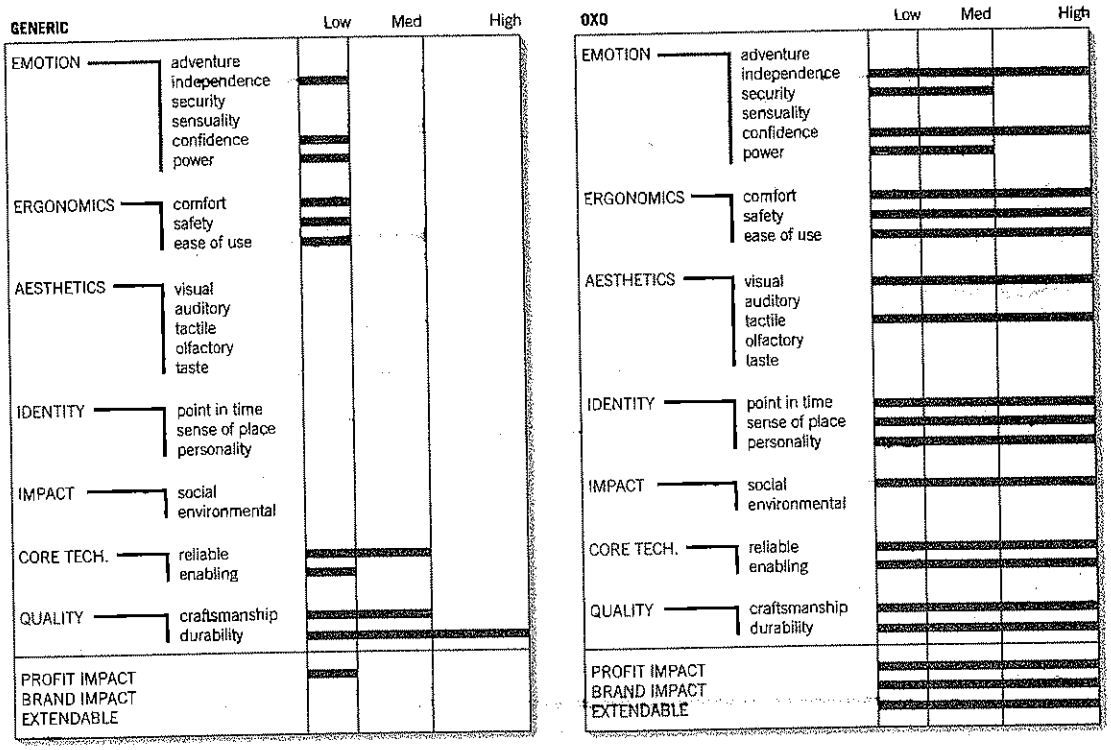
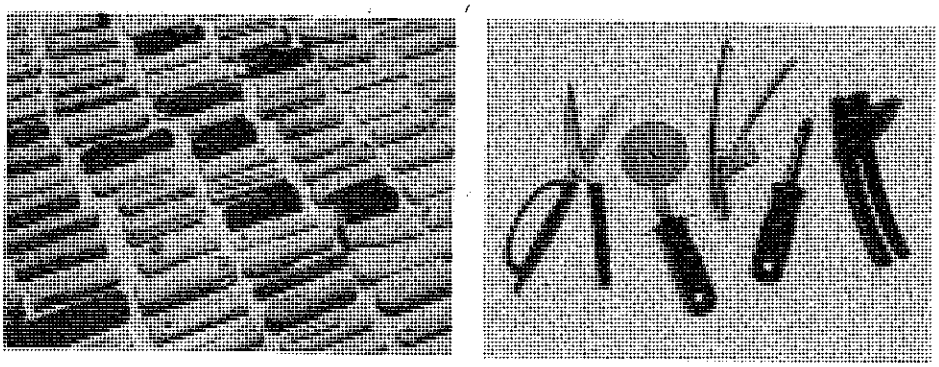


Figure 3.5 Value Opportunity Analysis of GoodGrips versus generic vegetable peeler.

While it is not clear what the per item profit is, it is clear why this product has become the first of a line of 350 and counting (See Figure 3.6). The sales figures put OXO in the black in the first year and the overall value and lines of the company have continued to grow during the last decade. Every company that produces products for the kitchen has been forced to play catch up. Instead of taking a cost reduction approach, OXO has chosen to create one new innovative product after another. The recent additions include a salad spinner that can be used with one hand and a line of hand tools that are well balanced, have simple and clean forms, and, of course, are more comfortable to grip. The product itself is core to the company's brand, with the featured black Santoprene handle becoming a part of the corporate name, "OXO GoodGrips."



(a) (b)

Figure 3.6 Studies for original handle (a) and extension of GoodGrips line shown through selection of handles and products (b). (Reprinted with permission of Smart Design.)

VOA of Motorola Talkabout

Next, consider a Value Opportunity Analysis of the Motorola Talkabout versus both the previous walkie-talkie and Motorola's own professional wireless communications products (Figure 3.7). The generic walkie-talkie did allow people to communicate while apart (giving medium adventure, independence, and security VOs) and they were reasonably easy to use. Their poor aesthetics and larger size, audible static with almost any interference, and lack of personality, however, limited their overall appeal and hampered their use. The poor manufacturing quality and limited styling and interface had no effect on the manufacturing companies' brands. The profit per item of the walkie-talkies was low and there was very little else you could do with them.

The Motorola professional products have strong VOs in the independence, confidence, security, and power emotions—they work well and consistently and people know that they do. They have very strong core technology and quality VOs and a strong auditory aesthetic. The previous professional products were reasonably comfortable and easy to use; they had a strong identity, though they did not adapt to any particular trend. Their use in mission-critical situations had strong social impact. Motorola certainly had high profit per item for their professional product. Their products had a strong brand impact, but areas of expansion for those products had reached a plateau. The team, however, needed to take advantage of the company's brand equity and technological expertise in developing the new consumer product.

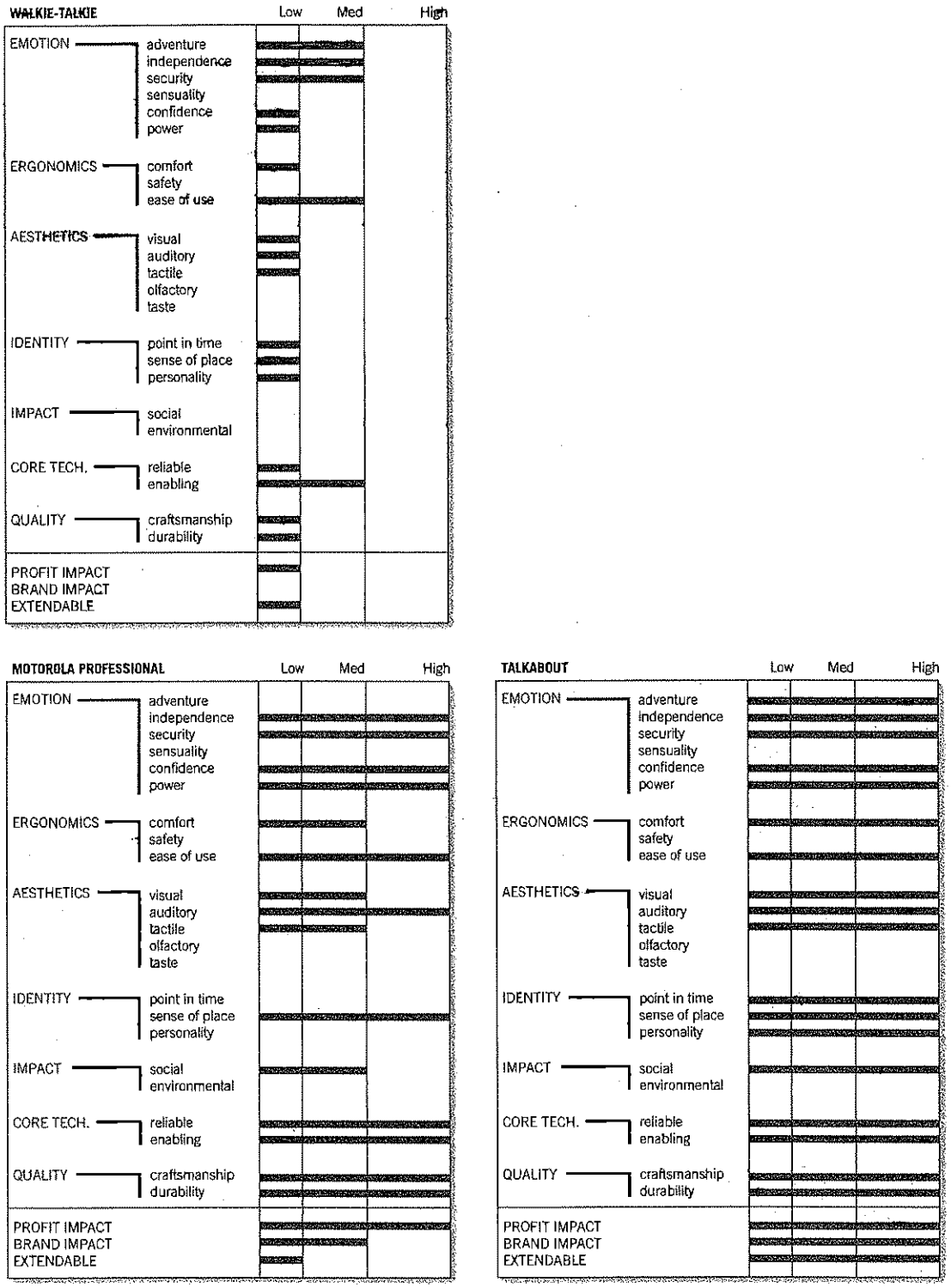


Figure 3.7 Value Opportunity Analysis of Talkabout versus walkie-talkie and Motorola professional two-way radio equipment.

The Talkabout maintained the perceived technology VOs (at least for the needs of the target market), but went after the identity, appropriate aesthetics, ergonomics, and emotion VOs. The product clearly went beyond the generic walkie-talkie in every value facet, and went beyond previous Motorola products by appropriately targeting the needs of the consumer market. Bruce Claxton, design director of the Talkabout project, stated that the design awards that Motorola received resulted in advertising worth several million dollars to the company. The value of this Upper Right product is reflected in the fact that the Talkabout has been awarded one of 12 Gold Design of the Decade Awards from the Industrial Designers Society of America (IDSA) and sponsored by *BusinessWeek*. It introduced Motorola two-way communication products to an entirely new consumer market and is now core to Motorola's brand identity. Today, millions of units are sold in a business that did not exist three years ago. The success of the product has produced line extensions that have built on the Talkabout's success. Sales of this product set a record for the consumer walkie-talkie industry and continue to climb. Motorola products now have primary shelf space in a greater range of stores. Departments in stores that carry the Talkabout promote Motorola quality and innovation in new ways. Motorola could have canceled this project as too risky for a company that has made its name in the professional sector. This one decision has opened up an unlimited range of new product opportunities and broadened the brand equity of the company.

VOA of Crown Wave

We turn now to a Value Opportunity Analysis of the Wave versus the previous solution: a rolling ladder (Figure 3.8). Although it is obvious that a higher-priced product would be more attractive than a simple ladder to perform a task, it took an analysis of what value and needs the potential (and resulting) product would fulfill versus a ladder to justify the development of the product. Although the developers did not directly use our method, the VOA is enlightening. The rolling ladder is cheap and lasts a long time, but there is no pleasure or security in using it. There had been several deaths from people using it in small parts pick environments. It allows a mundane task to be accomplished in a mundane and tedious way. Like the generic vegetable peeler, many nondescript ladder manufacturing companies make money through high volume versus high profit per item. And there is reasonable expandability from different sizes and features (such as extensions and trays).

The Wave creates a series of value-added attributes. It allows one person to work effectively, efficiently, and safely. It decreases worker mental and physical repetitive

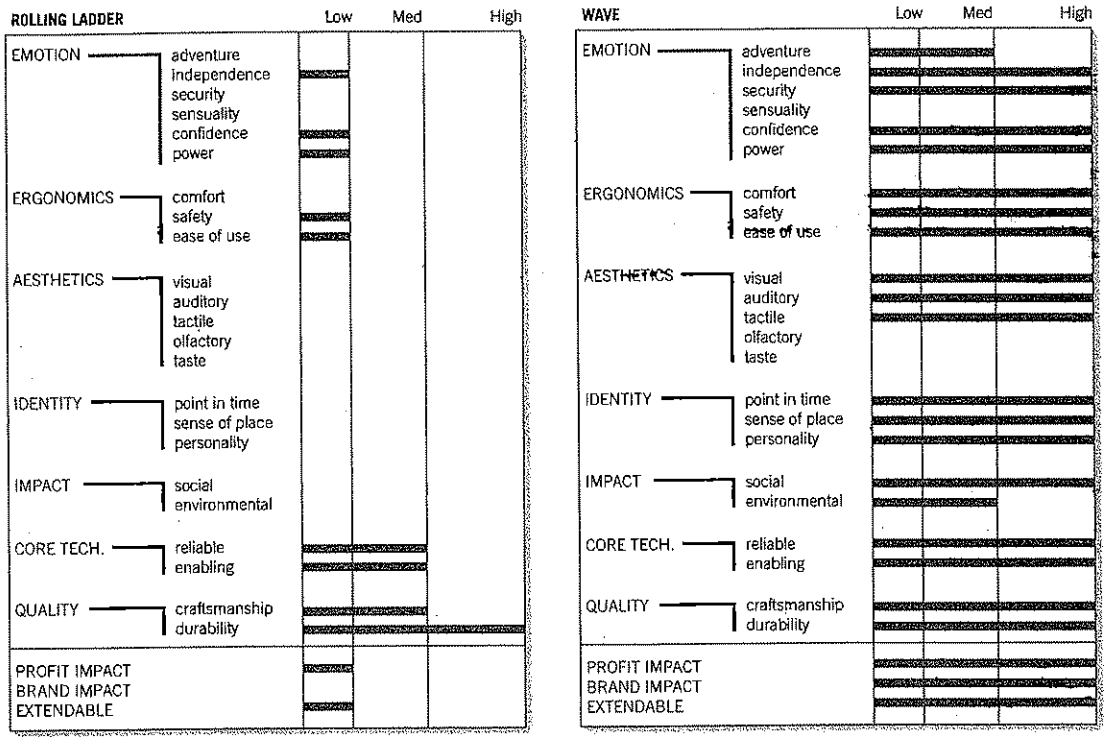


Figure 3.8 Value Opportunity Analysis of Wave versus rolling ladder.

stress and increases worker safety. It is easy to learn and fun to operate, increasing worker satisfaction and enjoyment on the job. In terms of VOs, the Wave promotes high independence, confidence, and adventure, with very high ergonomics, appropriate aesthetics, and a strong product identity. Although the product costs more, the technology is reliable, of high quality, and reduces injury. The product provides a new profit area for Crown. The new product brand strategy gives the parent company an identity that takes their products out of the warehouse and puts them into consumer environments, broadening the brand equity. This new area can be the beginning of an entire new product line for the company as they explore small part picking and retail store applications.

VOA of Starbucks

Finally, we turn to a Value Opportunity Analysis of Starbucks (Figure 3.9). Recall the SET Factors in Seattle and the target market of professionals with disposable income. The previous focal points for coffee and conversation were coffee shops (our choice of comparison), diners, and doughnut shops. The typical coffee shop had reasonably tasty and reliable food and a pleasant but often dated and nondescript atmosphere. Patrons gathered to socialize and eat, but didn't consider it a leisurely environment, particularly inviting, or the place to "be seen." Instead there was a level of independence with a focus on food, and often a sense of adventure to find the really distinct environment with the great specialties instead of the usual, mediocre fare. Coffee shops are reasonably profitable but typically lack any brand equity or ability to expand.

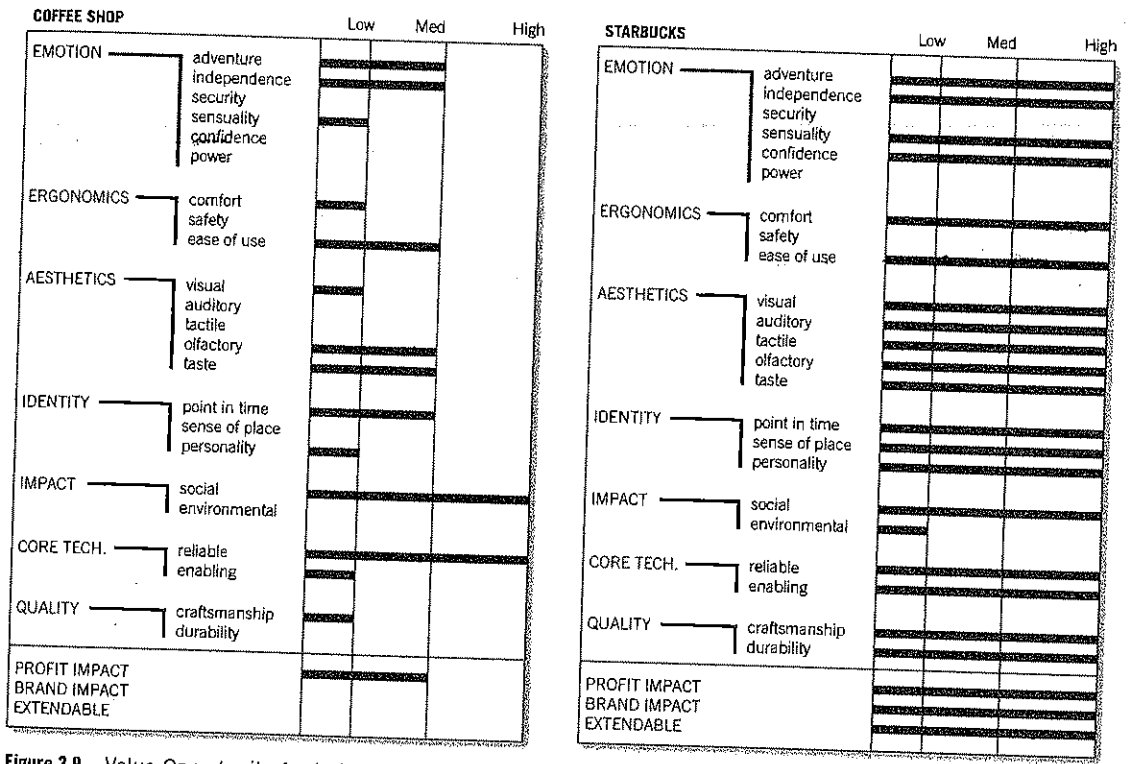


Figure 3.9 Value Opportunity Analysis of Starbucks versus a coffee shop.

Diners and coffee shops are as American as the apple pie they serve. However, as the SET trends shifted, the environment, atmosphere, and perceived quality of food and coffee diminished. Diners gave way to fast food chains that created increased speed and established a threshold of consistent value at low prices. As the cycle continued, fast food lost its perceived value and there was an opportunity for Starbucks to create a new solution that promoted coffee first and food second. Their standard was higher and so was the cost. The environment was changed to create an appropriate atmosphere for purchasing and experiencing a higher quality coffee than could be purchased at a fast food chain or at the few remaining diners. Starbucks saw the POG. They created the new experience for people, allowing them to take a few minutes out of their day to relax and enjoy the company of others or to read a good book.

Starbucks is a stark contrast to fast food and a shift from the classic diner. Here the emotion, ergonomics, *all* aesthetics, complete identity, core technology, and quality VOs are at a maximum. Their ability to capitalize on all Value Opportunities is an indication of their success. They even have strong impact VOs, with their creation of a social gathering place and their concern for the environment through recycled paper goods. The result is that Starbucks has high profit margin on their products (as of today, we pay between $2.95 and $4.85 for coffee and milk under such names as latte, cappuccino, and double espresso). Starbucks has clearly demonstrated how value and strong identity enabled their expansion into 2,500 stores in 13 countries, with products available in airports, turnpike rest stops, and supermarkets.

The Time and Place for Value Opportunities

Just maximizing the Value Opportunities isn't enough to guarantee an Upper Right product. There are two critical issues that must be considered. The first is that mechanically finding ways to just increase the VO attributes, as you perceive them, is doomed to failure. The VOs must be maximized based on the product end user's perception of value. Further, the VOs must work in concert to create a complete product in the Gestalt sense, not a set of features that each work in their own independent way to achieve an aspect of an experience. To enable a team to succeed in reaching a complete design requires a vision, and usually a visionary. There is often a core team or even an individual with the vision of what the product should be, not in the detailed sense but in the POG sense. In large companies, the visionary is often not part of the core team, but rather a manager in the position to fund and protect the core team.

Upper Right products don't just satisfy POGs, rather they satisfy the vision of how the POG affects society and the SET Factors.

The second critical issue is to recognize that VOs are a representation of the SET Factors, at a given point in time. SET Factors are dynamic. If the company does not keep a sense of the pulse of change in the target market as the SET Factors and VOs change, an Upper Right product today can easily become a Lower Left product tomorrow when a competitor recognizes the new SET Factors and creates a product to meet a more current POG.

VOs and Product Goals

Figure 3.10 shows specific goals for each VO attribute for the Wave. The VOA does not generically apply to the design of all products. Instead it provides the basis for developing product-specific goals. Each VO attribute needs to be interpreted within the context of the SET Factors and specific POG for a given market and user type. It would be easy to just claim that a new product will maximize all of the VO attributes. To be useful, the team must determine how the product will serve to maximize each relevant VO.

The Upper Right for Industrial Products

What is striking today is that Upper Right products that enhance experiences or fulfill dreams are emerging in all types of industries. Crown's Wave is one example of a product category that previously had no understanding of the need for style and value. The Marathon carpet cleaner in Chapter 8 is another. Electronic test equipment has found the value in adding style to an otherwise banal industry. Fluke's consistent yellow and gray styling, clear brand identity, and ergonomic design separates their product from the pack.

Even traditional commodity manufacturers are making the Move to the Upper Right. VistaLab Technologies manufactures pipettes used in various laboratory applications including sample preparation, reagent addition, and other precision liquid handling tasks (see sidebar). The company has been working closely with a major design firm to design ergonomic, styled products. The company recognizes that even in the conservative laboratory supply industry, adding value through style and ergonomics will add to the experience of using their product and separate them from the competition. By improving the balance and feel of a common laboratory tool, technicians can feel better about their work and themselves.

WAVE

EMOTION	adventure	Continuation of the quality of experience expected of personal products (car, bike, motorcycle)
	independence	Freedom to move effortlessly through and up and down within work environment
	security	Feeling of safety and stability
	sensuality	N.A.
	confidence	Feeling of certainty to perform required tasks
	power	Ability to have control over one's work environment
ERGONOMICS	comfort	Satisfying and enjoyable experience while using product in standing position when lifting and reaching; controls must be comfortable to hold
	safety	Operator must be securely enclosed in vehicle particularly when in lift position; product must not pose significant threat to others in warehouse/ retail environment
	ease of use	Ingress and egress of vehicle must be accomplished through a few simple movements; operator controls must be easy to learn and easy to react to; vehicle must be easy to maneuver
AESTHETICS	visual	Product should have appropriate look for lightweight lift vehicle that may be in retail space
	auditory	Product must be quiet when in operation and use sounds effectively for warning and emergency situations
	tactile	Interactive surfaces must have appropriate material and finish to promote effective use
	olfactory	N.A.
	taste	N.A.
IDENTITY	point in time	Must establish a new visual aesthetic for the area of light duty lift assist products
	sense of place	Design must be appropriate to retail environments
	personality	Serious but fun and give the appearance of being light and nimble; must be a departure from the look of Crown's heavy lift equipment
IMPACT	social	Should have a positive impact on the quality of worker experience and retention and be consistent with OSHA standards
	environmental	Must be produced with the environmental standards for other Crown equipment
CORE TECH.	reliable	Product must perform consistently and be easy to service and repair.
	enabling	Product technology must fulfill claims of product by safely and smoothly moving and lifting operator to perform tasks
QUALITY	craftsmanship	Must maintain the integrity of all Crown products, not being seen as cheaper but rather lighter
	durability	Must be able to maintain function and appearance appropriate in retail environment throughout life of the product

PROFIT IMPACT – Create new profit stream for Crown

BRAND IMPACT – Create a new brand identity that places product identity over company

EXTENDABLE – Capable of generating a variety of new off shoots from original design

Figure 3.10 Value Opportunity Goals for Crown Wave.

VistaLab Designs the First Ergonomic Pipette

For over 35 years, VistaLab Technologies has made pipettes and other liquid-handling products. Their original pipette is a 30-year-old product sold to the laboratory market, which is very conservative in buying habits. Many lab technicians were trained on the VistaLab product and they are still using it many years later (see Figure 3.11). The current market is competitive and cost-driven. VistaLab's original product is still made from metal while the competitors use plastic and tend to have much lower production costs.

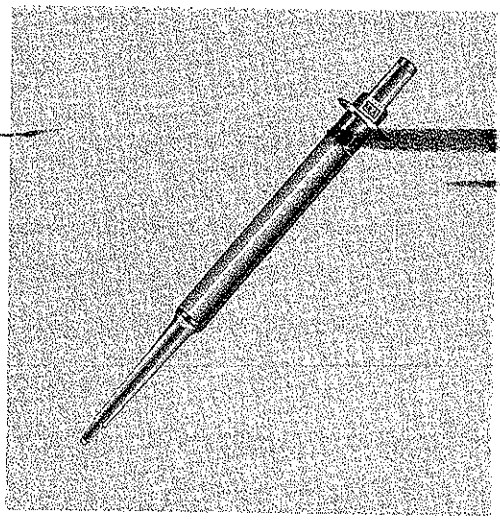


Figure 3.11 Original VistaLab pipette product. (Reprinted with permission of VistaLab Technologies.)

The VistaLab Product Development Team, led by Vice President of Product Development Jeff Calhoun, decided that instead of catching up to the competition, they needed to leapfrog the competition and "do something very different." The problem with most pipettes is that they are not ergonomic because the piston is in line with the pipette tip. When the thumb pushes down, its angle is unnatural and can be hard to control. The other extreme is fully electronic equipment where the technician controls the liquid distribution electronically, rather than with finger pressure. The design team discovered that lab technicians like to control and feel the liquid moving in and out of the tip themselves by pushing the piston. VistaLab rethought the process and decided to create an ergonomic pipette with a shape that was determined by the human anatomy, not design convenience. They also chose to use electronics to assist the technician in setting the adjustable volume rather than over-automate the liquid handling process.

The design team hired Frogdesign from New York (how else to leap*frog* the competition?) and worked closely with the firm to create the ergonomic pipette shown in Figure 3.12. The goal was a radical departure from the standard design, capturing a creature-like and emotional form that was easy to approach. The team performed a detailed ergonomic study (a task analysis discussed in Chapter 7) of the mechanics of using a pipette. They combined primary research with VistaLab's cumulative and intimate knowledge of the customer to create this Upper Right design. The company is clearly making a statement of how style and ergonomics can merge with technology to create a differentiating, high-value product. In 2001, the product won the Gold Industrial Design Excellence Award for the industrial and scientific equipment area by the IDSA and sponsored by *BusinessWeek*.

Figure 3.12 VistaLab's new ergonomic pipette. (Reprinted with permission of Frogdesign and VistaLab Technologies.)

Dave Smith, leader of the design of the Wave, comments, "When you design a product you don't change who the customer is. When you get up in the morning you use your electric razor and clean yourself by dispensing soap from the pump container. You go downstairs and get ice and water from the door in your refrigerator. You get in your car and insert your key and away you go." All of these products are designed to meet your value needs, wants, and desires.

Smith then says, "You get to work and all of a sudden you are supposed to change? It doesn't work that way. You have a basic expectation of product features and form. You evaluate your environment based on cumulative experiences."

So if you are a manufacturer of clamps or bolts, why should your customer have to sacrifice what is expected in their own personal purchases? Think about an ergonomic clamp or bolt, much like VistaLab has considered an ergonomic pipette. Creating such an Upper Right product could significantly differentiate you from your competition and raise the level of expectation of the customer who needs to assemble your product.

In addition to enriching the work experience on the assembly line, consumers are now demanding an aesthetic for the interior of products. The trend began with the iMac, where translucent exteriors means that the aesthetics of the interior of the product now matters. End users now see each and every component so the style of their assembly becomes critical to the overall success of the product.

The same is true in other products previously considered impervious to the issues of style. Engine compartments in cars must now capture the theme of the vehicle, even though the customer is likely to open the hood for the first and last time in the showroom.

From Original Equipment Manufacturer (OEM) parts to complete products, high value products are the leaders today. This and the previous chapter explained the characteristics that make a product Move to the Upper Right. The book now turns to a process of how to get there—strategic commitment, brand management, and a well developed user-centered iNPD process.

Summary Points

- ❑ Value is no longer the most features for the lowest cost. For breakthrough products, value is lifestyle-driven, addressing the qualities of a product that make it useful, usable, and desirable.
- ❑ Breakthrough products fulfill a fantasy by facilitating a more enjoyable way of doing something.

- ❑ There are seven basic Value Opportunities to differentiate a product and contribute to the overall experience of use: emotion, aesthetics, identity, ergonomics, impact, core technology, and quality.
- ❑ VOs are relevant at a point in time and within the context of a product opportunity. They provide the basis for developing product-specific goals to meet the needs at that time.
- ❑ All industrial products are candidates for the Upper Right by addressing ergonomics and lifestyle effects in conjunction with technology features.

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