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# Consumer-driven product development: strategies and execution

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## Preface

At Kawasaki Motorcycle & Engine Company, we are taking a new initiative, “voice of the customers,” in order to raise profitability to its maximum potential. This article provides an overview of its customer-centered strategies and execution.

### 1 Vital role of the Customer Insight during product development for mature markets

The author proposes a unique definition of a “mature market” in this article. In the early stages of a consumer market, consumers have limited product knowledge, very limited brand relationship because of their lack of purchase experience, so when a company launches “new and improved” products, customers will buy the new products replacing the old ones. In a mature market, however, customers have deep product knowledge and brand preference as a result of their purchase experiences. And individual customers know exactly what they like and what they dislike, and this knowledge actively drives their own brand/product choice behavior. They already have their own consideration set before purchase. They are selective. A mature market is defined as a consumer-driven market.

Whether a country is emerging or already advanced, its markets always proceed from underdeveloped to mature. In a mature market, in which customers are the ones who best understand what they want, low prices are no longer a major motivation for making a purchase. If a product does not reflect the consumers’ value system, they will never purchase it. When doing business in a mature market, or dealing with knowledgeable, experienced and brand-conscious consumers, it matters little how much money a company has invested in R&D, plant, property and equipment or how much the company believes its product to be “new and improved.” Unless the customers’ tastes are reflected in the product, the company will find it

hard to make profits in a mature market.

Consequently, deep understanding of customers, or customer insight, should be the starting point of product planning. Customer strategies based on customer insight are vital to the development of profitable new products. In other words, “customer research” is as necessary as engineering research for a manufacturer hoping to develop profitable products.

#### (1) Customer insight

Customer insight is a deep understanding of customers that comes only from repeating customer research. A company’s sustainable competitive advantage in terms of product differentiation meaningful to the customers, cost management, speed of development, and quality is affected by the quality and quantity of the customer insight the company has acquired. It is no exaggeration to say that a difference in customer insight is the difference in corporate competitiveness.

And because customer insight is not something easily imitated, it is fair to say that customer insight is the source and foundation of long-term competitive advantage. The ability to think up products that will sell is, so to speak, the ability to think up products that customers will choose. There is no doing that without customer insight. Developing products that will sell requires the kind of innovation and inspiration that can only be achieved through interactions with customers, as depicted in Fig. 1.

#### (2) Customer strategy

The speed of maturation varies widely from one market to the next. Companies need to be prepared for the time when their markets mature. Above I defined a mature market as one in which customers themselves best understand the products they want to buy, and in which companies cannot simply force their products on customers. In this type of market, if you have 100 different customers you will have as many different customer



Fig. 1 Customer preferences research

preferences. To deal effectively with this situation, our company's product planning department groups (segments) customers and works to make clear the customer groups, the top-priority customer groups (target segments), that will resolve the business concerns we face as a company. In mature markets, customers are selective, but at the same time, manufacturers must be selective as well.

Which customer group should we take care of by this product? If this group were to purchase the product, in what ways will the company benefit? What will be the competitors' reaction? Are our customers superior to the competitors' customers? These are the kinds of questions that need to be addressed. For instance, if stable cash flow stream is our goal, then it is important to increase the number of customers who show strong brand loyalty\* and tendency of making cash purchases. The more the number of profitable loyal customers, the higher the economic stability in volatile times. That being the case, the products we develop need to elicit a strong response from that segment. A company's problems will be ultimately solved by its customers. This integrated way of thinking about target customers based on our business concerns is called a customer strategy.

\* Brand loyalty: The tendency of customers to purchase specific brand products even when substitute products are available from competing companies, as well as their feelings of affection toward the brand.

### (3) Segmentation studies and targeting

Our tool for identifying our most important customers (target customers) is segmentation. When done correctly, segmentation automatically reveals target segments. Brands and products will be developed for the target segments. Moreover, the ability to segment customers

effectively determines the quality and effectiveness of our subsequent product development and the level of our product's profitability.

### (4) Development plan as a Strategy Document

With so many people involved in product development, documentation is needed to align everyone's direction. The development plan should fully reflect customer insights based on our various forms of research and should be shared and thoroughly understood and agreed upon by all development personnel.

Naturally, as a strategy document, the development plan must be drafted with our strategic competitive advantage in mind. At the same time, the document must be crafted in a way that is as easy to understand as possible. The easier the plan is to understand, the greater the speed and accuracy of communication will be, and it means that the strategy will be executed effectively and efficiently and the expected results will be perfectly achieved.

### (5) Voice of the Customers (V.o.C.) activities

In simplest terms, V.o.C. activities are those that bring the target customers into the product development process and elicit feedback and ideas from them. Such activities should begin from the time when the previous product model enters the market. At that stage customers can provide valuable development feedback that helps prevent the need to change directions or backpedal later on in the development process. "Customer-driven product development" based on V.o.C. places importance on post-sales.

Another anticipated benefit of V.o.C. is the inspiration that our engineers derive from direct contact with

customer opinion, allowing them to generate highly competitive ideas as a result. Ideas to significantly lower costs also often emerge at this stage. That said, customers are not development professionals who can be expected to provide specific solutions, to identify alternative actions, or to offer concrete proposals for new products. Actionable ideas will solely come from the engineers themselves.

## 2 Important elements in product development

The mission of the R&D department is to meet targets in terms of schedule, cost, and product differentiation. These three elements are indicators of a company's competitive strength in product development. Each of these three elements is closely tied to customer insight.

### (1) Schedule

As we define it, the development period begins the day the kickoff meeting for the product in development is held, and ends the day that normalized production begins. The business plan depends on the start date of normalized production for the new product. If that date is delayed, it can wreak havoc on revenues. Likewise, an extension of the development period not only can result in higher R&D expenses but also affects negatively the schedule of the next models. As obvious as it may seem, a delay in the schedule can never be regained. That is why, of the three elements, we place the greatest importance on adhering to the schedule. Adhering to the development schedule, much less shortening it, demands that any waste in the development process be eliminated. Development front-loading, which I will comment on below, is one method for achieving this.

### (2) Cost

We execute comprehensive cost management on the understanding that a company's value depends on its ability to lower costs. By assigning cost coordinators to each product in development, we are able to see how much any given design change costs each time a design change is made.

New products are developed on the assumption that they will have a higher marginal profit ratio than existing products. Even so, there is no point to developing a product if carelessly lowering its cost in areas that are important to customers when making a purchase decision is going to result in developing a non-competitive product that sells fewer units. That is why we leverage customer insight to fully understand areas that customers do not value in order to aggressively reduce costs in those areas during the initial stages of development.

### (3) Product Competitiveness; Purchase Motivation Drivers and Customer Satisfaction Drivers

When we talk about product strength, we need to know there are two kinds of product attributes, i.e., Purchase Motivation Drivers and Customer Satisfaction Drivers.

#### (i) Purchase Motivation Drivers (Product appeal)

Purchase Motivation Drivers are defined as "the ability to attract customers based on a product's attributes that customers recognize and understand *before* purchasing the product, and by outperforming other companies in the delivery of those attributes." To maintain sales levels in the long term after a product has launched, we need very strong Purchase Motivation Drivers over rival companies. We establish and continuously strengthen product appeal by obtaining customer feedback early on.

Customers, not companies, decide whether a product is appealing or not. This is why, to create new products with greater appeal than rival company's, it is important for R&D departments to actively use the language, metaphors, and stories that our customers use, to share with them a common "culture," and to make various R&D decisions from within that commonly fostered culture.

#### (ii) Customer Satisfaction Drivers (Brand Loyalty Drivers)

Customer Satisfaction Drivers, on the other hand, are defined as "the ability to satisfy and retain customers based on the differentiated product's attributes that the customers understand *after* purchasing the product, and by outperforming other companies in the delivery of those attributes." Strengthening Customer Satisfaction Drivers is vital if we want to retain customers who repeatedly choose our products and enable us to secure stable cash flow streams, and to do this by strengthening customer brand loyalty and our brands' "defenses" against the various forms of "attack" by rival companies, such as new products and price reduction.

#### (iii) What is a "Strong Product"?

A strong product is defined as "a product that continually attracts the target customers and contributes significantly to the corporate bottom line." In terms of customer satisfaction and marginal profit, the strongest product is one with the highest customer satisfaction score and the highest marginal profit.

By measuring annual changes in customer satisfaction and marginal profit by region, product, and brand, it becomes possible to identify our important areas.

### 3 How to develop “Strong Products”

The following is an overview of the elements of R&D management, i.e., Process and Structure, that are important for developing the “Strong Products.”

#### (1) Process

##### (i) Front-loaded approach

Front-loading is primarily a means of keeping to the development schedule. Engineers must be pro-active, intuitive, and foresighted. The period between the kick-off and design freeze is referred to as the front-loading stage. In addition to maintaining the schedule, it is important during this front-loading stage to “produce a more complete prototype vehicle” by focusing on improvements in the development process. Because product appeal and cost are often determined at this stage, we make every effort during the image sketch stage, which occurs early in the front-loading stage, to invite discussion, encourage discoveries, identify negative aspects, and generate ideas. This sketch review, consisting of brain-storming sessions, is a means of making discoveries more rapidly. An effective way of doing this is to discuss previous ideas that were set aside for reasons of time during the development of earlier product models. These ideas can be put back on the table at the sketch review stage and discussed.

##### (ii) Closed loop development

The effectiveness of front-loading depends on feedback from customers regarding earlier product models. Rather than repeat the same mistakes over and over by repeatedly developing new products without customer feedback, engineers obtain feedback *directly* from customers to increasingly “strengthen” the product. Such closed loop development is also valuable because it cultivates intuition, which is important to supplement the limitations of knowledge in new product development.

Customer surveys are used as a means of obtaining actionable feedback, with an emphasis placed on the importance of post-sales. R&D activities do not end until feedback is obtained from the customers.

##### (iii) Regulatory measures and compliance

Regulatory measures and compliance in each country’s market are also considered as a part of R&D, though I will not go into them in detail here. We make every effort not only to collect information about regulatory developments in our sales regions well in advance, but also to actively express the company’s views on trends toward regulation. It is a part of R&D activities.

#### (2) Structure

##### (i) Organizational specialization

We currently develop a wide range of products, each with its own specific customers and rival companies. To achieve our development schedule and cost objective while generating product appeal, it is essential to make rapid, rational decisions about each product. For that reason, when development goals and target customers are highly specific to a given product, it is necessary to have development values that are specific to each development team. At Kawasaki, we have undertaken organizational specialization, still based on V.o.C.

##### ① Profit-driven Team

The Profit-driven Team gives first priority to marginal profit. Throughout development, it keeps in mind that “a company’s ability to lower costs is an important part of its value” and “cost management is accumulated knowledge about the target customers, and technologies are a source of competitiveness.” They lead product development primarily for emerging countries.

##### ② Tech-driven Team

There are some product areas where V.o.C. activities alone are not enough to increase product appeal. These include product areas driven by technologies that are superior to those of other companies, an area in which our company stood out in the past.

The engineers in this area need to create technological “spontaneous mutations” in our products that generate long-term excitement among passionate Kawasaki enthusiasts by delivering design specifications that are ten years ahead of their time. This team develops “technical barrier” technologies and products that could only be developed and produced at our mother factory, the Akashi Works. These are marketed primarily in advanced countries.

##### (ii) Organizational unit’s value vector

(Performance measure and key driver)

Within these specialized organizational units, engineers share the same value vector in order to avoid schedule delays due to conflicting development decisions or cost increases as a result of excessive evaluation standards. As their value vector, a performance measure and key driver are identified in advance for each team when assigning them a product in development.

##### ① Performance measure

This is the definition of product development success and the top priority among the many numerical objectives that development is expected to achieve. This number represents the degree of success and is

used to draw comparisons with previous product models and ultimate objectives.

② Key driver

Among the many product development requirements (schedule, costs, product appeal, national regulations, testing and research costs, etc.), this is the driver that leads product development to success and is an important value vector for the development team.

For the Profit-driven Team, their performance measure and key driver are both marginal profit ratio; for the Tech-driven Team, the performance measure and key driver are the design specification and technical innovation, respectively.

Each development team requires specialized expertise to achieve competitive advantage over rival companies with which each development team directly competes. For that reason, even when teams face similar issues, their solutions to them may differ radically. This phenomenon is considered evidence that our organizational specialization is functioning properly.

**(3) Development tools**

(i) Research tools

In terms of achieving competitive advantage, the important question that management faces, beyond the development process and structure, is what development tools the management can provide engineers so they can meet their objectives in terms of schedule, cost, and product appeal. There are various tools—knowledge, insight, analytical software, management techniques, research tools, and networking with external professional organizations. Tools themselves are an important element of competitive advantage.

I have already said that customer research is vital to developing consumer products that are highly oriented to consumer tastes. The following is an overview of some of the tools currently used for customer research.

① Paperless marketing research

Engineers meet *directly* with the target customers to ask questions, seek confirmation, make discoveries, and take action. We do not take uncertain action based on reports written by intermediary people.



Fig. 2 Usage studies examine how customers use products

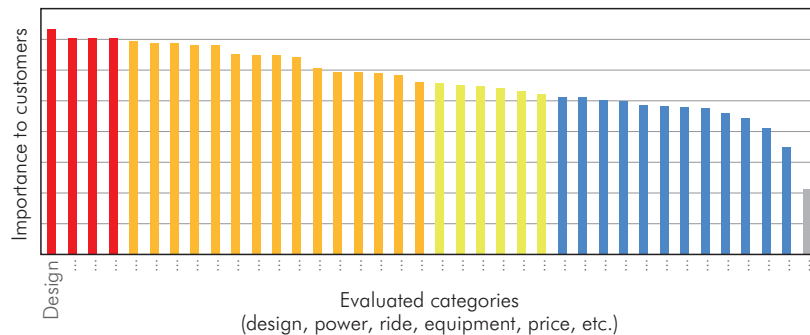


Fig. 3 Example of “visible” research results

## ② Usage studies (Fig. 2)

From the realization that some questions can only be answered by customers on-site, our engineers visit customers during the front-loading stage to study how they actually use our products. These studies have a major impact on schedule, cost, and product appeal during the subsequent product development process. Because usage differs from one customer to the next, usage studies are directed at the target customers identified in the development plan.

### (ii) Visualizing the research results

In order to develop high quality products that satisfy requirements in terms of schedule, cost, and product appeal, everyone involved in development needs to share the results of research accurately. For that reason, the measured results of our research are always quantified (Fig. 3).

After making improvements to product appeal, we measure product strength by region and product model in order to understand what elements were more important to the customers when they made purchase decisions. We make these results “visible” so everyone understands at a

glance where we should direct our spending to “strengthen” our products before our competitors do. The following are categories we measure for comparison with rival companies and our earlier products, our current position, and speed of improvement.

- Level of customer satisfaction (by region, by product model)
- Points of customer dissatisfaction, and their ranking
- Important attributes for customers, and their ranking (Sharing points of concern with customers)
- Level of customer satisfaction for important attributes

## Closing

Our V.o.C. activities after the launch of a product allow us to hear directly from customers around the world. Customers’ voices permeate our R&D office. In their own words they tell us enthusiastically how Kawasaki’s products have benefited them. The emotional relationship between our engineers and customers will create a bright future by allowing Kawasaki to keep introducing “Strong Products.”