Introduction
Historically the marketing literature has examined the relationship of product design and consumer response from a conceptual perspective, elaborating theory to fit reality. Often the material focussed on post-mortem analysis of what went wrong and looked at consumers as mostly isolated from the product design process. Tacitly, manufacturers paid lip service to consumer tastes and created products whose attractiveness was sometimes validated at the last moment in the marketplace (Dolan and Matthews, 1993). Uniformly, the emphasis was on the product, and consumer reactions were treated as secondary, dependent variables. The result was often costly product failure which suggested more attention on the factors necessary for new product success (McGuinness, 1990). Much of the effort was devoted to the link between product success and key steps in the new product development process.

The approach was structured, emphasizing the components, and the results were no surprise. They showed that vendors who omit or skim through steps in the development process suffer a higher rate of product failure than companies which execute each step (Hise et al., 1989). More recent landmark works in marketing (Bloch, 1995) have added to knowledge of the relationship but have maintained the focus on the product rather than the consumer.

What is surprising in the age of the marketing concept and market orientation, is that the consumer is not the first step in the process. The most troubling findings report that there are continuing difficulties in introducing successful products despite enormous company emphasis on new product development. It is clear that following the new product development process without missing or glossing over stages, and making large expenditures along the way, are not enough. It is almost incomprehensible to witness companies squandering vast resources on product development because no one bothered to listen to the consumer. This situation is especially perplexing. Surveys of sources of new product ideas, reported by consumer and business product managers, found that business marketers use consumer input significantly more than consumer product companies. This paradox may result from the smaller number of business and industrial customers and the relative ease of identifying them. It may also stem from a lack of formal continuous procedures for generating and screening new product ideas (Gordon, 1996). It sounds obvious that consumer marketers must learn exactly what target consumers want in products and services. To achieve that knowledge, there must be high, relevant consumer involvement in the process, from idea generation to commercialization (Ciccantelli and Magidson, 1993).
Organizational learning involves two distinct types of behavior. The first, adaptive learning, is vital for the day-to-day combat in which many firms engage (Senge, 1990a, 1990b). Adaptive learning occurs within a set of constraints which represent the company’s assumptions about itself and its environment. It focuses the organization on adapting to serve the market. Management highlights the behaviors and resources necessary to capture the market and defend the organization from competitors. To do so, it develops core capabilities in response to market needs, and organization structure to support the capabilities. It hires managers and develops a corporate culture to support its goals. It strives for more effectiveness by focusing its resources and refining its core capabilities. With a continued focus on the market, it is possible that these core capabilities can dominate the direction and development of the firm, constraining it. They would become core rigidities that inhibit innovation (Slater and Narver, 1995). In fact, adaptive learning can be a trap. In many entrepreneurial firms, for example, adaptive learning dominates. Learning is restricted to the struggle to do nothing more than adapt to market changes in a reactive way. They are always trying to catch up. In doing so, they are vulnerable to fundamental shifts in the underlying dynamics of the marketplace.

In contrast, the second type of learning, generative learning, occurs when the organization is willing to question its very foundations. Generative learning requires an organization to challenge its own assumptions about its mission, customers, competitors and strategy (Slater and Narver, 1995). If it can look at its environment beyond its familiar assumptions, to underlying dynamic market processes and interrelationships, it may be able to discern new directions and new possibilities. Ultimately, it may be poised to exploit those new dynamics.

Organizational learning has been described as a three-stage process of information acquisition, information dissemination and shared interpretation (Sinkula, 1994). Information may be acquired through direct experience, from organizational memory, through the experience of others. Firms must be open to forming relationships with external “learning partners”, including customers, suppliers, distributors, alliance partners and universities (Slater and Narver, 1995). It is critical that information acquisition be an open-minded inquiry. All organizations get information about trends, opportunities, threats in their environment and through familiar processes like environmental scanning. The important character of the learning organization makes the activity active, continuous and forces self-critical benchmarking. In this way firms can be aware of prevailing trends that are important to their success (Day, 1994). This implies that managers should develop multiple credible sources of information inside and outside of the organization. Failure to get a different perspective than that prevalent in the organization can lead to a false sense of reality and missteps in the marketplace.

Slater and Narver (1995) distinguish organizational learning from personal learning by the two additional components, information dissemination and accomplishing a shared interpretation. An important element of a learning organization is an organic and open structure. In a product development context, information dissemination is a sharing process that requires information to be transmitted to all decision makers in an organization.
The process of sharing adds to understanding. The inevitable requests for clarification, interpretation and application, force active learning and add to the information value. If any internal barriers to information flow exist, they should be removed to exploit the intelligence and increase the ability of the firm to make decisions rapidly.

The second component, accomplishing a shared interpretation, requires a consensus on the meaning of the information. Again, fundamental challenges to the established assumptions about the organization and its environment may be necessary. The most effective organizations may have to endure a significant period of disagreement about the strategic implications of the information. The risk will probably be too great to use the information strategically, without first examining its effects on the organization’s strategic assumptions carefully. Emphatically, both external and internal information sources are required for interpretation. Extracting meaning from the data may be enhanced if there is some discrepancy among the sources that force close examination (Slater and Narver, 1995).

While the organization is the premier component in the learning organization, the concept has changed the focus from the product first to the consumer. Marketers have begun to recognize that implementing learning organization concepts can be a means of increasing the competitiveness and effectiveness of marketing. Thus it is a focal strategic variable (McKee, 1992). The key element of the learning organization is the integration of information dissemination throughout the decision-making structure of the organization. To accomplish this, some companies have used temporary cross-functional teams to perform a variety of tasks, including product development. These teams employ information technology like electronic mail and shared databases to accomplish their work. There has been a trend to institutionalize this multidisciplinary approach, although not all organizations use it. Business marketers tend to use the cross-functional approach more than consumer companies.

As a result, the learning organization enjoys more integrated and timely information processing. The consequence is faster and more effective decision making. Despite the increase in information processing effectiveness, the question of where to get valid information remains. The fundamental constraint in many markets is that most consumers do not know what they want, how they want it or what is possible to create (Ciccantelli and Magidson, 1993). The important modifier in the last sentence is “most”. There are some customers who know what is wrong with existing products, how they can be improved, what new applications they can serve and why they should be developed. They probably even know how to price them.

Lead users in industrial new product development

In the industrial marketing arena, companies have discovered a potentially valuable source of consumer information. Experienced product users, called lead users or lead customers, can serve as a problem-forecasting and problem-solving aid. An industrial lead user is often described as an educated, knowledgeable employee with considerable experience with a vendor’s product. Lead customers may be engineers or technicians, but may not have an academic degree. Their key characteristics are interest in, and use of, the vendor’s product on the job. They are involved individuals who use the product extensively and are familiar with its features, advantages and
benefits. Their focussed set of characteristics could make them a valuable addition to a product development team.

The value of lead users in the product development process
The usefulness of lead users in industrial product development has been highlighted by Herstatt and von Hippel (1992). Their value lies in more than just their education and product experience. Their product involvement in the context of their job performance, makes their experience especially meaningful in several ways.

Lead-user concepts are valuable

Market acceptance. Products and services are often described as bundles of benefits. In reality, they deliver their benefits interactively with users. At the concept generation stage, companies design their offerings as a list of component benefits. The problem implicit in this view is the implication that a product is the sum of its components. Products and services are anything consumers think they are. Even if vendors have articulated product benefits accurately, few consumers will recognize them all. Most will value only those components that are particularly important to them and they may ignore the rest. Since lead users represent others like them, they will probably recognize a set of benefits which are valued by their peers. Findings suggest that tested lead-user concepts are valued by more typical users in target markets (Herstatt and von Hippel, 1992). Thus, lead user input can materially improve the market acceptance of new product concepts.

Product improvement. In general, industrial consumers vary not only in their experience but in their product and job involvement. They tend to be astute problem identifiers. In terms of experience, such consumers may have already developed product use habits and shortcuts which improve their performance or save them time. They may have been forced to adapt to a group of products in use on the job and will notice the shortcomings of each of them. Such involved users recognize problems immediately. Apparently minor product features can become serious issues that hamper productivity and may reduce market acceptance. There is no substitute for user input which reflects the complex operating environment found on the job.

In addition to recognizing faults, they tend to generate preferences and wish lists of product features that would make their lives easier. That kind of insight can be highly beneficial in developing new and improved products.

Early identification of trends. Industrial lead users are usually highly involved in using products for problem solving. In decision-making and information-processing terms, they engage in deep and active information processing, making numerous connections among ideas. As a result, they may put products to extreme tests, taking them into areas previously untried. Consequently, such consumers are a potentially rich source of product testing information. They not only can distinguish what works from what does not, but can provide the reasons why. The notable point may be that they can explain why the problem is significant to them in the first place.
Companies usually cannot anticipate the sometimes idiosyncratic product applications consumers try. Some applications will have no market significance. However, it follows that if companies do not identify new applications, they will not perceive any resulting new markets. Information of this type is vital for staying a step ahead of competition and is one element in maintaining competitive advantage.

**Lead users as a source of new product ideas**. Arguably their most important potential benefit lies in any problem solutions lead customers have already considered or attempted. Their actions may save companies considerable development efforts. Occasionally, experienced users who have considered previously unforeseen applications of products or services to new situations have elaborated new applications. This is another example of the potentially valuable experiential resource which can be exploited by industrial marketers. Their major contribution is a deep understanding of both technical issues and consumer requirements. They can provide the most accurate information necessary to satisfy other consumers. Ultimately, they may be instrumental in developing new product solutions to consumer problems before competition even recognizes them.

One last reason to include selected industrial user information is the expected benefits of new ideas. Ideas generated by lead users were found to have enhanced marketplace acceptance (Herstatt and von Hippel, 1992). The reason for this finding may be that lead-user preferences are meaningful for their professional segment. They can provide detailed understanding which internal product managers can only hope to duplicate.

**Exploiting lead-user knowledge**. Experienced users have long been recognized as a source of product input. Their experience gained in previously unanticipated situations or applications can foster product improvement. Industrial marketers face two choices. On one hand, they can seek out and listen to consumers, benefit from their experience and use it to improve products and maintain a competitive edge. Or, they can focus on their internal product development teams, ignore early consumer involvement and run the risk of competitive threats. The choice is increasingly to include lead users in the new product development process (Herstatt and von Hippel, 1992).

**Identifying lead users**

Industrial marketers have the advantage of dealing with a discrete number of individuals, identifiable by their salesforce and technical staff. Industrial salesforce training includes the notion of identifying important decision makers at each customer site. Often salespeople are familiar with the buying center approach and try to identify individuals and their user roles. In their boundary spanning activities, they may visit customer organizations and interact with important employees. If the product or service involved is very technical, salespeople may deal with engineers, scientists or other specialists. If the product is not very complex, interaction with almost anyone is a possibility. The fact remains that individuals who are users are relatively easy to identify since they may represent only a few of the discrete number of industrial users at a particular location. The outstanding ones will be easy to identify.
In some instances, lead users initiate contact with companies seeking aid in solving product or service related problems. In doing so, they identify themselves as users. What helps companies identify them as lead users is the quality of questions they ask and the type of support they request. Ordinary users may need hand-holding basic support. They may ask questions covered somewhere in written documentation. In contrast, lead users are much more sophisticated in their information needs. They do not ask for elementary support that can be found elsewhere since they have already found it. They are typically the first to report a problem to a vendor. In some instances, they ask the type of question that might have to be referred to a support supervisor, or even to a team of support engineers. Capturing that information is a straightforward task. Companies can identify them, their company, the problem they have, the situation they face and eventually the solution that works. In a learning organization, that information would be stored, then channeled to the appropriate decision makers including, in this case, the new product development team.

Depending on the product or service involved, technical support may be an important means of communication between customers and the company. If the consumer initiates contact, he or she is receptive to communications with company representatives who can offer information and problem-solving help. The lead user may also be receptive to a more involved step, helping design or test new product ideas.

Often this resource goes unexploited by producers. Too often the emphasis can be on short-term problem solving to satisfy the customer’s immediate concern. In fairness, it is likely that the company will actually use this information. It will probably be incorporated into the body of knowledge used in customer satisfaction or technical support to satisfy other consumers facing the same problem. Sadly, using the information in this way is limited. It can help today, but does little to improve tomorrow’s market competitiveness.

Industrial companies with a near-sighted focus may ignore the value of intelligent, involved customers as a product development resource. Companies striving to become learning organizations would force a recognition of the potential benefits of long-term relationships with such customers. In addition, learning organizations would expend resources to manage the company-customer interaction. In this instance, the technical support and customer satisfaction personnel should be trained in identifying first reporters of problems. The company should structure information handling procedures to channel reports of the problem, the identity of the customer and the significance of the information to the new product development team. It would then be the team’s task to follow up and exploit the connection.

Managing lead-user input – the boundary spanning new product development team

Those industrial marketing organizations that recognize the usefulness of lead users face the task of integrating them into the new product development and evaluation structure. The most logical means of accomplishing this is to form a team. Katzenbach and Smith (1994) define a team as “a small number of people with complementary skills who are committed to a common purpose, performance goals and approach for which
they hold themselves mutually accountable.” Many of today’s organizations use a team approach to accomplish their important tasks (Dumaine, 1994; Maginn, 1994; Salas et al., 1993; Stevens and Campion, 1994). The benefits of teams are considerable. Ideas can be thoroughly discussed and conclusions reached more rapidly in small groups than if information is passed along a chain, or even back and forth several times.

Successful product/service development teams are often cross-functional (Brown and Eisenhardt, 1995). Individuals sharing perspectives from different disciplines, such as marketing, sales, research and development and production, interact to offer creative solutions to problems, which become the basis for new product/service ideas. The attractiveness of this arrangement stems from the learning organization emphasis on team learning and reaching a shared vision. The importance of cross-functional teams is that they can reduce misunderstanding that arises in the different values found within functional areas. By sharing information early and throughout their operation, cross-functional teams can identify problem areas early in the process for attention and solution.

A logical extension of the team concept applied to product development is to include external associates on the team. They bring different perspectives, which could contribute to learning. Although care must be taken to select individuals with the “right stuff” the benefits of doing so are clear.

Using external and internal cross-functional members creates a boundary spanning team. Boundary spanning teams offer potential benefits to competitive organizations. When effective, they can materially increase the quality of new product ideas (Herstatt and von Hippel, 1992). The value of boundary spanning teams is that they can reduce misunderstanding that arises in the different values found inside and outside the organization. Like cross-functional teams, by sharing information early and throughout their operation, boundary spanning teams can identify problem areas early in the process for attention and solution. Companies which are already successful in using interdisciplinary product development teams may be the only organizations capable of exploiting this resource. Still, there are a significant number of issues to be addressed.

As mentioned above, selection is important. Lead users who are screened for the quality of their input based on their professional background, job responsibilities and product experience offer a chance of making a contribution. The chances increase if they have good interpersonal skills and are amenable to work as part of a “team.” They should also be selected based on their willingness to contribute to a better product in which their reward might be limited to solving a problem they need solved.

Structuring the “team” is important to exploit the information while preserving the benefits to the lead customer. If the internal new product development team is a multifunctional group like a project team in a matrix organization, external members can be added for a true boundary spanning team. However, the team structure must allow managing the team’s performance. The combination of internal and external members complicates coordination and presents a management challenge.
To aid in management, team reward systems must be developed carefully. With completely internal teams, the best method is to reward members on the basis of the entire team’s performance. In the boundary spanning team, the situation is more complicated. The question of how to reward the external members must be solved. The first reward available to external team members is a solution to their problem. This may translate into personal satisfaction, better job performance and rewards from their companies. Beyond that there is a set of tangible and intangible possibilities ranging from payment, to early access, to new products.

While structuring the reward system is vital, it is not sufficient to ensure team productivity. In essence, a boundary spanning team is a partnership between its members like a partnership is between their organizations. Such partnerships can suffer from a variety of stresses that can harm the quality of their performance. Typically, lead customers will represent their organization’s interests which may deviate from the host organization’s interests and affect partnership success. The question of how to maximize the success of partnerships has been addressed in the literature. The primary characteristics of partnership success are: commitment, coordination, trust, communication quality and joint problem solving as a conflict resolution technique (Mohr and Spekman, 1994). These factors serve to align partners’ expectations, goals and objectives. In seeking lead customer input, managers must structure their boundary spanning teams to select outsiders for their commitment to contributing to the solution. Thereafter, extraordinary steps may be necessary to make the outsiders feel like members. Communication will be vital in avoiding misunderstandings and team coordinators must be extraordinarily careful to foster trust. One important advantage of the boundary spanning team character is its focus on joint problem solving which can aid in avoiding conflict. That orientation can help to foster group norms that encourage information sharing which will tend to remove the sources of misunderstanding.

If industrial marketing organizations can manage the problems in exploiting boundary spanning teams, they have increased chances of success. If they can include lead consumers in the new product development process from idea generation through to commercialization, the prospects for successful introduction are markedly enhanced (Herstatt and von Hippel, 1992).

**Boundary spanning product development in consumer markets**

The major problem facing consumer product and service marketers is that they have no easy access to lead users. Typically, consumer products are sold in retail situations which separate the company from the customer. The structure that makes product distribution possible, the channel, often obstructs effective communication between manufacturer and consumer. Thus, clear two-way communication between the manufacturer and customer may not be possible. Consequently, vendors may not get a clear view of exactly what their ultimate customers prefer (Ciccantelli and Magidson, 1993).

In the other area, consumer services, there may be more personal contact. However, significant numbers of services, like insurance, banking and even vacation travel, may be very impersonal. Banking, for example, uses new interaction modes like automatic teller machines. These units limit contact with bank personnel to the point that no human teller may actually see a
particular customer for long periods. The organization will be limited to knowing not much more than the name of the customer – and the preferred payment method. Using this information, a bank could guess at customer segment needs and target different segments with different service bundles. However, the essence of the process, educated guessing, limits its success. The question of how the consumer organizations might duplicate the industrial lead-user analog and integrate consumers into the product development process is of increasing importance.

Surrogates for lead users in consumer marketing: boundary spanning product development
As described in the literature, the lead-user concept involves the twin elements of a learning relationship and a form of product development team. Recognizing the two components can aid in exploring other analogous means to obtain user insight that might be valuable in consumer marketing.

Offer choice
Learning relationships have been described as opportunities for customers to teach companies about their particular preferences and needs (Pine et al., 1995). The more the company knows about a specific customer’s needs, the higher the potential of satisfying those needs. For clarity, it is important to differentiate variety from customization. From the consumer’s perspective they are antithetical. Variety, especially wide variety, may present consumers with a heavy information processing burden. They must sift through the various choices, screening the clearly unacceptable and evaluating the remainder. In contrast, customization presents little or no information processing work for the consumer. A vendor who knows the product possibilities and the consumer’s specific needs can tailor a solution. Even in complex situations in which a single solution is not possible, the company engaged in active learning relationships can offer its customers a discrete set of choices, reducing the decision-making task.

Since knowing and serving customer needs is fundamental to marketing success, this well-defined information can convey an immense competitive advantage. Customers will recognize the quality of the company’s products and services in their own very personal terms. Ideally, they will realize the value of dealing with an organization that acts like an interested partner – with a memory. This kind of perception operates in both consumer and industrial markets. It explains why some consumers go to favored retailers, ignoring discounters and why businesses do not respond to low price offers from erstwhile suppliers.

Using the learned information, the vendor will differentiate itself and its offerings. Thus, if the organization is active and effective in catering to known customer preferences, it can build a barrier to entry foreclosing competitors. The basis for such barriers to entry is the transaction cost of training a new supplier. Companies pursuing learning relationships actively can amass a substantial amount of pertinent personal information. The continuous process of gathering and using that information molds consumer expectations about service and satisfaction. Customers considering changing suppliers may be deterred by the task of teaching all of their specific needs to a new organization. To these customers, price is much less important than the product/service quality they have enjoyed. In fact, firms which produce products of perceived high quality that satisfy their customers’ needs fully,
without further after-sale modifications, are associated with market success (Pavia, 1990).

Businesses have long recognized the value of customizing their products and services. Using the information learned from customers, they can even differentiate commodity products. By designing services customized for particular customers, they can personalize products and services. However, the problem remains – how does one get the information for consumers?

Sources of consumer experience
The best product development efforts involve some kind of consumer research to learn consumer preferences. Often that research is used to validate internally generated product ideas. Occasionally it is used at the idea generation stage but may be employed later after a prototype is produced. It includes several well-accepted consumer research techniques which have been available for years. The most popular method, focus groups of target consumers, has been validated and used extensively. Typically, focus groups involve a small number of consumers selected from a market segment that the product developer wants to target. The meeting takes place in a room under the direction of a moderator to discuss products or problem situations and lasts a few hours or less. The goal of the meeting is to learn what participants think of products and services. While focus group data can benefit the new product development process, they provide limited interactivity. In some cases, focus groups can be subject to the “12 angry men” syndrome in which one member can sway the opinions of the rest and destroy the group’s representativeness.

A more interactive technique used recently is consumer idealized design. It is somewhat similar to the focus group technique but differs in several ways. First, it usually takes an entire day. Second, it requires innovation and interaction from participants. Third, it is task-oriented and uses competition among participants to attain performance. Fourth, it requires the group to articulate and design an ideal product in a designated product category (Ciccantelli and Magidson, 1993). The technique is a new development which holds promise of eliciting more pertinent information from consumers. It is limited in part by its short-term nature, a single day and its use of a small number of participants. In addition, its success depends on the skill of the facilitator. Consumer idealized design offers more insight into consumer wants and needs than focus groups and can be used at the idea generation stage. Still it falls short of an interactive ongoing process.

Active product development efforts have sometimes included retailers as substitutes for consumers. Retailers are often available for consultation throughout the product development process and may provide ongoing interactivity. Retailers have more direct contact with consumers than manufacturers and, it is reasoned, should be better able to understand their needs. In reality, companies have not universally exploited this information source. While companies which have succeeded in involving retailers have enjoyed new product success, suppliers have not been fully integrated into the new product development process.

Some of the research techniques used above are employed because asking consumers directly is too costly and surveys do not usually elicit enough
response or information (Day, 1994). Consumer surveys have been used effectively by some organizations. For example, USAA, the financial services firm whose membership is restricted to active duty, reserve and retired military officers, has used surveys of its membership to identify new products. Because its membership is limited and the company has offered excellent service, survey response rates approach 60 percent. Echoing the problem of consumers not knowing what they want, USAA avoids structured questionnaires. They rely instead on unstructured, open-ended surveys to elicit more complete responses. The result is better information for idea generation.

Another technique which can be used to elicit consumer information is the beta test. The beta test originated in the computer industry and indicates the first stage of consumer product testing which follows in-house consumer usage testing, called the alpha test. Beta tests offer a potentially valuable test of product features and benefits with “real” consumers. Typically, consumers test in their own environments without direct supervision. They may follow testing guidelines but have the freedom to play with the product. In the potentially complicated computer industry, such tests are vital to uncover unanticipated problems or adverse interactions. Ideally, this gives a more realistic market test. In reality, it often uncovers problems that were never identified during in-house testing.

Beta tests serve three major test objectives: evaluating product function, evaluating product support and the marketing mix and sales promotion. They are being used more frequently among consumer packaged goods – like shampoo and may be more affordable than other testing methods (Dolan and Matthews, 1993). However, they do not usually help in recognizing ideas for new products. When consumers in beta tests are asked to generate a wish list of product features and explain why they are of value, some can supply salient features. This information might be valuable for next-generation product refinement. However, in terms of new products, few generate usable ideas.

Like information management with lead consumers, beta program management has its own set of issues. Chief among them are site selection criteria and customer relationships. In practice, beta sites are chosen to represent a portfolio of customers since the goal is to cast a wide net to find product problems. In this case, a variety of customer skills and vocations is the best for exposing product flaws. Customer relationships are important, since one of the objectives of beta testing is to ensure satisfaction with the product. In summary, beta testing strives for customer involvement, but incorporates it after the idea-generation stage. If one views the product development process as having an ongoing evolutionary nature, one can argue that today’s beta testing effects tomorrow’s idea generation. However, the beta test does not usually deliver long-term interaction analogous to the lead-user situation.

Despite the benefits of the techniques described above, the question of how to get the equivalent of lead-user boundary spanning team interaction with consumers remains.
Boundary spanning product development teams

A very recent development in learning what consumers want involves Internet interaction with custom-designed home pages. Admittedly, the Internet is accessible to relatively few consumers, although the numbers are growing. Initially, marketers realized that they had to be on the Net because everyone else was, but had no clear idea of its capabilities. Vendors are maturing in their use of the Internet and using it to achieve several objectives. One innovative use of the Internet was developed by Hamilton Beach-Proctor Silex (HB-PS). The company developed a home page which allows users to design their own appliances. It is interactive and fosters consumer involvement in thinking about product features and values. The responses can be captured to exploit user ideas and feedback. The information can be directed to the new product development team immediately for assessment. Notably, the consumer can be identified and contacted for further input if necessary. Companies like HB-PS have created a new consumer design organization, the virtual product development team.

The virtual team

Within the constraints of Internet access, the value of the virtual team is that it casts the same wide net as beta testing. Numerous segments can interact, with the company providing extensive input directed at product design. In addition, such interaction provides a contact point which allows the company to follow up for clarification or additional consumer input later. To avoid misunderstanding, the virtual product development team described here is not the same as the virtual corporation. In virtual organizations, important creative functions are outsourced in the attempt to lower costs, increase responsiveness or gain competitive advantage. The danger is that companies have outsourced their critical centers of competitive advantage and lost them (Chesbrough and Teece, 1996). In the virtual team, the responsibility for product development remains with the organization. Thus, external members can contribute to the process but cannot commandeer it. While the virtual product development team is interesting, it currently offers limited consumer input. It also suffers from its essential character: external contributors may never meet the internal team members face to face. This could lead to an exaggeration of the coordination problems of industrial boundary spanning teams.

Structuring the boundary spanning consumer product development process

In pursuit of the lead-customer analog in consumer marketing, the logical conclusion is that a form of boundary spanning interactive team can provide similar value. Remembering the concerns connected with industrial boundary spanning teams, the three issues, identification of lead consumers and other external members, selecting them for an interactive product development team and coordinating their input, need special attention.

Identify educated users

Identification can use familiar consumer research methods. Some companies use database marketing to identify educated users. Quarterdeck Software combs through internal user records to select potential beta testers. Some of the records include ordinary owner registration cards containing questions which can discriminate experts from novices. A sample of advanced users can be drawn and sent a questionnaire, asking whether they would consider being part of a beta test and asking a number of questions to determine their suitability. One key structured question asks the number of hours per week the consumer can devote to beta testing and includes a “more than 20 hours per week” choice. This serves to eliminate those with only a casual interest.
who would not be sufficiently involved. It also sends a message and distinguishes those who would be good choices. Armed with these responses, the company can select a useful sample. The technique can also be employed for more involved contact.

Other examples of database marketing for consumer contact exist. Honda used its database of owners to check their opinions of their cars. The program, called, E.T. Phone Home, involved production employees who actually called owners to ask them about their satisfaction with Honda automobiles. The responses were recorded and disseminated throughout the company. While the technique has undoubted public relations value, it can help uncover customers for further contact.

Just as lead customers may identify themselves to industrial companies, they may do so to consumer product and service providers. Tracking consumer letters to the company or customer service calls to technical support, can uncover consumers with something to say. Follow-up contact and screening can help identify suitable individuals for further contact. In summary, the variety of internal databases in combination with questionnaires are useful for identifying individuals who could offer longer-term interaction.

Learning relationships with consumers and other outside constituencies involve several principles associated with the learning disciplines: aspiration, reflection and conversation and conceptualization. Aspiration is the capability of the individuals in the relationship to orient themselves to what they truly care about. They must want the change they are working toward; they cannot be participants. Typically an entrepreneurial approach to risk is important since it helps in solving problems. Reflection and conversation refers to the ability of individuals to reflect on assumptions and engage in indepth dialog, not merely pass ideas back and forth. Information is not taken at face value in a learning relationship. Key points are challenged. They must hold opinions, yet be open to new ideas. Conceptualization is the ability of the individual to think with a systems orientation. Some people see singular events and/or entities and do not look beyond them. Others have an easier time seeing related components. The individuals attractive for learning relationships easily view and describe the nature and the intensity of interrelationships between the components of the system being considered. These serve as a background to consider when selecting both internal and external boundary spanning members.

Specific selection criteria should parallel those used to designate industrial lead customers. Thus, product knowledge, usage experience, availability and characteristics representing a target market segment are important. The most important characteristic is the consumer’s willingness to participate and contribute. Final selection could be made on the basis of ratings of questionnaire responses. If warranted, individuals could be interviewed and final selection could depend on the outcome of the interview.

Some companies may want to target competitors’ customers. Mailing lists of competitor customers are available for several product categories. They can be compiled by third parties but also may be available directly from the vendor. Notably, in the various personal computer software product categories lists are easily available. For example, users of Lotus Development Corporation’s Lotus 1-2-3 program have been identified and...
contacted by Microsoft Corporation for a discount on Microsoft’s competitive product Excel. Vendors could use such information to assemble boundary spanning teams to examine the problems with existing products and generate ideas for new ones.

Selecting nonconsumer external members like lead retailers and suppliers requires the same type of criteria with the addition of some type of allegiance to the corporation. Suppliers must recognize the benefit of helping a customer succeed. Retailers must recognize the benefits of their helping a manufacturer succeed.

Coordination and management of boundary spanning teams is sometimes difficult. After internal and external members are selected and the team begins to operate, the key elements of trust, open communication and joint problem solving must be paramount. In many cases it will be enough. Perhaps the most difficult issue is motivating the members with little to gain. If consumers are rewarded with praise, fees and early access to the products they have helped create, they may perform well. The question of how to reward suppliers may not be important if they are assured of gaining an advantage for the help they supply. Retailers and other middlemen may feel their efforts help others. If they expect some advantage in providing input, but other retailers reap the benefits, this source of information will be damaged. It is important to attend to those implications.

**Managerial implications and recommendations**

First, the foremost implication for managers is to continue to concentrate on learning consumer preferences and needs. Organizations should examine their commitment to the marketing concept—continuously. The methods discussed above offer the potential of learning consumer wants and needs in great detail. Armed with this knowledge, learning organizations can disseminate it widely within the product development and consumer satisfaction functions to achieve market success. To exploit the value of the information, the organization must remove any existing barriers to communication.

Second, the best method of creating quality consumer products and services is to involve the consumer in each step. Early and ongoing consumer input distinguishes successful from unsuccessful products. Currently, consumer product developers tend to develop first and ask consumer questions later. Research supports involving consumers at the idea-generation stage and from product development on.

Third, boundary spanning teams involving consumers, cross-functional internal members and external nonconsumers like suppliers and retailers, can provide valuable fresh perspectives to increase new product success. Such diversity of experience envelops the consumer buying process and can identify any problems, barriers or difficulties before they harm new product prospects.

Fourth, managing the company-consumer interaction requires resources, an effective organizational structure and a well-implemented information technology infrastructure. In daily operations, consumer information is generated which can be helpful in knowing the consumer better. For these data to be useful, they must get to the right decision maker. In other words, the trick is to recognize it, capture it and get it to the right people. In this...
instance, the technical support and customer satisfaction personnel should be trained in identifying first reporters of problems. The company should structure information handling procedures to channel reports of the problem and the identity of the customer to the new product development team.

References and further reading


(Dennis Pitta is Associate Professor of Marketing at the University of Baltimore, Baltimore, Maryland, USA. Frank Franzak is Associate Professor of Marketing at Virginia Commonwealth University, Richmond, Virginia, USA.)