An executive summary for managers and executive readers can be found at the end of this article

Redefining new product development teams: learning to actualize consumer contributions

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Introduction

The marketing literature has examined the new product development process in great detail. Each stage has been articulated and examined carefully. Marketers have paid particular attention to the important role of innovation for successful product development. Clearly innovation can be the core of competitive advantage for some firms and can be the vehicle for assaulting the market position of rivals. The example of Compaq, a market follower in the personal computer industry, eclipsing the market pioneer IBM through introduction of breakthrough products serves as a clear example of the market power of innovation.

Characteristics of creativity and innovation

Since innovation is recognized as important in successful product design, considerable research has examined the determinants of product innovation. Much of the work has focussed on individual characteristics of creativity and innovation in general. Thus we know that the celebrated advertising copywriters have personal characteristics called artistic, nonconformist and unconventional. The relationship of these characteristics to those needed by product designers may not be straightforward. Fortunately, some work has focussed on relationships more directly applicable to successful new product introduction, the characteristics of the innovative team (Thamhain, 1990).

Yet the ultimate test of product innovation is consumer response. In effect, companies have used each new product introduction as a field experiment to develop a template for successful innovation. Often marketers focus on post-mortem analysis of what went wrong and look at consumers as isolated from the product design process. In fairness, manufacturers do not generally ignore the consumer. Companies do acknowledge consumer needs when creating products. However, those products' attractiveness is sometimes validated at the last moment in the marketplace (Dolan and Matthews, 1993). One striking feature of the arrangement can be a hollow understanding of what customers want and the reasons that form their preferences. In the past, the result was often costly product failure that focussed even more attention on the factors necessary for new product success (McGuinness, 1990).

Customer information

The most successful companies consider some form of customer information in designing their products and services. After repeated examples of problems with product introductions, it is still striking that actual customer ideas are not usually the first step in the new product development process. In the age of the marketing concept and market orientation, even successful organizations work on a set of assumptions about consumer wants, needs and circumstances. Thus they tend to use distilled and derived information in creating new product offerings.

Recent findings report that there are continuing difficulties in introducing successful products despite enormous company emphasis on new product

development. This situation is especially perplexing. Surveys of sources of new product ideas reported by consumer and business product managers found that business marketers use customer 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 sounds obvious that 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). Examining the boundary spanning efforts of industrial marketers may increase the success of new product introductions.

Integrating consumer input consistently in an ongoing relationship is clearly difficult. Consumers and industrial customers are, in reality, not employees. They have personal interests and concerns that may not coincide with an organization's. They can expect little direct reward for their cooperation. In addition, consumer participation is also subject to the subtle structural influences of the product development team. Structure, command and control are related elements that determine team success (Senge, 1990). Typically, teams employ internal governing components. When two teams interface, two control elements interface also. The lesson learned in warfare is that the weakest part of a battle line is at the boundary between neighboring units. Although the physical distance may be but a soldier's arm length, unless the units are under the same commander's control, they cannot act as one. The weakness does not lie in the courage, intelligence or motivation of the troops but in the separation of the control structures. The analogy for product developers is that boundary-spanning teams need effective control elements that bridge the gap between internal and external members.

An organizational boundary-spanning team

A solution for increasing the success of new product introductions lies in melding the contribution of internal cross-functional teams and external members into an organizational boundary-spanning team. To achieve this balance, one needs to understand several elements: the characteristics, functions and processes of internal product development team; methods for actualizing organizational boundary-spanning teams; and the sources and uses of consumer information.

Characteristics, functions and processes of new product development teams

Teams are not new. The literature has examined teams extensively and several important findings have emerged. Work teams are the critical building blocks of an organization. They have been found to produce better decisions, more creative solutions, increased commitment and improved implementation. In modern corporations, which increase their differentiation and specialization to adapt to the environment, teams can provide a vital effect. Work teams provide integration of the variety of perspectives arising from a differentiated organization (Donnellon, 1993). Thus, they offer a means of assimilating the diverse functional areas.

Types of product development teams

Research has articulated differences between product development teams. Based on their objectives two basic types of teams exist: operating and innovating teams (Barczak and Wilemon, 1989). Currently, both types

usually include members from a variety of departments. Operating teams exist in many organizations and concern themselves with the day-to-day, evolutionary developments of current product and service offerings. Since firms recognize that customers demand constant improvements in products, operating teams focus on incremental changes to current products and services. They may also be charged with creating variants of existing products aimed at current or new market segments.

In contrast, innovating teams plow new ground. They do not routinely engage in day-to-day activities. Instead, they pursue new business opportunities that are quite different from existing ones. They usually have no institutional memory or knowledge on which to base their efforts. Innovating teams exhibit the second type of learning, generative learning. Generative learning occurs when the organization is willing to question its very foundations. Thus, generative learning requires a company to challenge 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 the new dynamics.

In research focussing on the leadership in each type of team, it was found that leaders enact four major roles: communicator, climate-setter, planner and interfacer. Findings indicate that leadership differences between the two types of team are striking. Generally, leaders of both types of team use the same basic techniques to accomplish their roles. However, operating team leaders tend to focus on a narrow range of familiar techniques.

In contrast, innovating product team leaders use a wider variety of techniques and tend to be more proactive in manipulating situations to control their team and its environment. Responses indicate that they were willing to go outside the organization directly to the consumer. Their willingness to explore outside the organizational boundaries can foster success.

Constant mutual adjustments

Cross-functional and organizational boundary-spanning teams

These findings lead to an important distinction between product development teams: their boundary-spanning focus. The operating teams spanned boundaries, but they were internal in nature. They are essentially functional boundary-spanning teams, called cross-functional teams. The boundaries spanned are between marketing and engineering, finance and R&D, market research and sales. They are narrowly focussed within the organizational walls. One important speculation is that cross-functional teams are vital because they allow constant mutual adjustment to the information provided by each team member. The constant adjustments serve to keep the team's efforts in tune despite potential changes and avoid the problem of a last minute change wreaking havoc with the rest of the project.

In contrast, the innovative teams spanned organizational boundaries and had a wider perspective. They were ready to interact with consumers, retailers, wholesalers and suppliers and typify the finding that groups that attend to their environment perform better than those that focus exclusively on a task. In addition, boundary-spanning teams convey the continuous mutual adjustment benefits. This becomes especially important when customer input is involved.

Methods for actualizing boundary-spanning teams

Organizational learning

Organizational learning is a multistage process of information acquisition, information dissemination, and shared interpretation (Sinkula, 1994). Information may be acquired from various sources. It is vital that firms be open to forming relationships with external "learning partners." Learning partners can include customers, suppliers, and distributors. It is critical that information acquisition be an open-minded inquiry. All organizations get information about trends, opportunities, threats in their environment 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.

Information dissemination

The second component, information dissemination, makes action possible. A learning organization must have an organic and open structure. In product development, information dissemination is a sharing process that requires information be transmitted to all decision makers in an organization. The process of sharing adds to understanding. Any requests for clarification or interpretation force active learning and add to the information value. If any internal barriers to information flow exist, they will reduce the ability to exploit the intelligence to make decisions rapidly.

The third component, accomplishing a shared interpretation, requires a consensus on the meaning of the information. 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. 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).

Team learning

Teamwork is paradoxical

Teamwork is inherently paradoxical. For individuals, teams and organizations, the team structure and processes impose contradictions and paradoxes that must be overcome for team success. Senge (1990a) relates the results of an ongoing laboratory experiment developed at MIT's Sloan School of Management in the 1960s. It illustrates the problems inherent in the discontinuous marketing decision being rooted in the basic ways that organizations think and interact. The exercise has been administered to numerous managers, worldwide, from a variety of disciplines. The results are always the same. A crisis of unfilled demand leading to overproduction and ruinous inventories is the typical result.

The exercise mimics the order characteristics of a channel of distribution, a suitable example of organizational boundary spanning in a system. The players are a retailer, wholesaler and manufacturer. Each has limited contact with the other, little more than exchanging the quantities of weekly orders. The simulation begins with low but rising demand for a product which retailers order in increasing amounts. The wholesaler in turn places orders

with the manufacturer for multiples of the retailer order quantities. Since there is an inevitable delay between larger retailer orders and increased production, shortages and stock-outs occur. To overcome the shortages, retailers consistently place larger orders than they need, hoping that if only a portion of their order is delivered, they will get at least what they need. The overordering at the retail level results in unintentional overordering at the wholesale level. When production ramps up to meet the inflated orders, retailers find themselves with overfull inventory and compensate by ordering nothing more. The information delay translates into overfull inventory at the wholesale level and eventually the manufacturer, producing at higher rates to meet increasing demand learns that there are no new orders. After running the exercise for 24 periods, the usual result is that high, costly, inventory amounts that will last for months saddle each level of the channel.

The structure of the system

Who is responsible? The lesson from the simulation is that no single person is the culprit. The result arises from the structure of the system. At each of the three levels, decision makers acted responsibly, trying to keep the product moving through the system to satisfy customers and avoid shortages and unfilled demand. Senge cites real life examples of the boom and bust crises in production-distribution systems. The computer memory chip industry in the 1970s is a clear example. After stable production and plentiful supply a sudden shortage resulted in overordering and panic. A huge order buildup and delivery delays led to overproduction. By the time the real demand was satisfied, inventories ballooned and hurt manufacturers fundamentally. Those same manufacturers were so weakened they were unable to avoid acquisition later by companies wanting to enter the semiconductor market.

There are other examples of the “inventory accelerator” effect in business cycles in industries ranging from real estate to fashion and in entire national economies. The real problem is that the scarcity-production-glut sequence often leaves businesses coping with the last crisis, unable to prepare for the next correction and increase in demand.

One example of panic buying which did not lead to overproduction occurred in the late 1980s. A late-night American television show host commented on past product shortages like gasoline and fuel oil. He then joked about the next shortage: toilet tissue. When a few consumers took the joke seriously and overbought, they left store shelves empty. Other consumers interpreted the empty shelves as evidence of a real crisis and they overbought also. Panic buying started and grew to noticeable proportions. It took a retraction and considerable news coverage to show that there was no real shortage and thus no real crisis.

The difference between the semiconductor and toilet tissue examples is that the two underlying communication processes are fundamentally different. In the former, the communication process is rooted in normal business practice, reinforced by the system of doing business. In the latter case, a single public statement, followed by public news coverage, alerted managers to the true nature of the demand. The information circumvented the ordinary operation of the business ordering system and prevented the harmful inventory accelerator effect.

Adaptive learning

In organizational learning terms, the simulation illustrates adaptive learning often used to make operating decisions. Adaptive learning is vital for the day-to-day combat in which many firms engage (Senge, 1990a). Adaptive learning occurs within a set of constraints which represent the company’s assumptions about itself and its environment. It focusses 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 focussing 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.

Generative learning

In contrast, the second type of learning, generative learning, occurs when the organization is willing to question its very foundations. Generative learning requires challenging 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. Truly innovative teams engage in generative learning.

Learning and structure

A major lesson from the MIT simulation is that structure influences behavior. When placed in identical systems, even dissimilar managers produced similar results (Senge, 1990a,b). The underlying constraint in such situations is that the structure of the organizations forces managers at each level to react to isolated events. Limiting the ability to communicate or interact with other organizations in the channel, other than by placing orders, is to prevent learning what is really happening. The implication for product development teams is to bypass or avoid system bound information gathering and decision making. Teams, not just innovative teams, should garner information from the retailer, wholesaler, and consumer directly.

Structure, communications and organizational learning

In designing a product team, issues such as structure, communications and organizational learning must be addressed. If the integrational effects of learning can be enhanced, boundary-spanning teams will 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 that are already successful in using interdisciplinary product development teams may be the first organizations capable of exploiting this resource. Still, there are a significant number of issues to be addressed. One issue involves how a product development team can acquire ongoing consumer input.

Sources and uses of customer information

Lead users

A potentially valuable source of customer information exists in the industrial marketing arena. Experienced product users, called lead users, 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 users may be technically trained, but their key characteristics are interest in and experience with the vendor's product. They are involved individuals who use the product extensively and are familiar with its features, advantages and benefits. Thus they are a valuable addition to a product development team. Herstatt and von Hippel (1992) have emphasized the usefulness of lead users in industrial product development. Lead users' product involvement on the job makes their experience especially meaningful in several ways.

Market acceptance
Products and services deliver their benefits interactively with users. At the concept generation stage, companies design their offerings as a list of component benefits. However, products and services are anything consumers think they are. Even if vendors have articulated product benefits accurately, few consumers will value them all. Most will concentrate only on components that are particularly important to them. 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 other typical users in target markets (Herstatt and von Hippel, 1992). Thus, lead user input can materially improve the market acceptance of new product concepts.

No substitute for user input

Product improvement
In general, industrial consumers tend to be astute problem identifiers. In terms of experience, such consumers may have already developed product use habits and shortcuts that improve their performance or save them time. They may have been forced to adapt to products in use on the job and will notice the shortcomings of each of them. Therefore, apparently minor product features can become serious issues that hamper productivity and may reduce market acceptance. There is simply 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. Such insight can be useful in refining products.

Identification of trends and new product ideas
Since lead users are usually highly involved in using products for problem solving, they may apply products in unexplored situations and may supply product testing information. Companies usually cannot anticipate the sometimes idiosyncratic product applications consumers try. While some applications will have no market significance, others might. Clearly, if companies do not identify new product applications, they will not perceive the resulting new markets. Information of this type is important for competitive reasons and is an element in maintaining competitive advantage.

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. In fact, 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. Furthermore, they can provide detailed understanding that internal product managers can only hope to duplicate. Experienced users have long been recognized as a source of product input. Increasingly, industrial marketers have included 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. Moreover, their salesforce training includes the notion of identifying important decision makers at each customer site.

The first to report a problem to the vendor

Sometimes, 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 often 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.

The benefits of long-term relationships

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.

Actualizing lead user input
Industrial marketing organizations that recognize the usefulness of lead users face the task of integrating them into the new product development and evaluation structure. This can be accomplished by using a team.

Successful product/service development teams go beyond the cross-functional. Cross-functional teams allow individuals to share perspectives from different functional disciplines and to interact to offer creative solutions to problems (Gordon, 1996). These solutions can 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.

External associates being different perspectives

The boundary-spanning team in product development includes external associates. They bring widely different perspectives, that could contribute to learning. Although care must be taken to select individuals with the "right stuff" the benefits of doing so are considerable.

It must be emphasized that 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 for managing the team's performance. The combination of internal and external members complicates coordination and presents a management challenge.

Reward systems

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 which might included payment, early access to new products, or a special honorary status. The Smithsonian Institution in Washington, DC offers such rewards. It accepts volunteer help in most facets of its operation. In many cases the volunteers are accorded an honorary title and some privileges. Its Air and Space museum attracts aviation enthusiasts from around the world. Its lesser know Paul Garber aviation facility houses and restores the entire collection of air and space craft. Visitors who reserve space on a tour of the facility are served by volunteer experts called docents. Their knowledge and helpfulness are professional, even though they receive no pay.

In addition, external members might be invited to company functions and given available organizational public relations items like logo pens to foster the feeling of inclusiveness. They should also be invited to the public new product launches of the project on which they collaborated.

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 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 effect 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.

Increased chances of success

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)

Managerial implications and recommendations

First, the best method of creating quality products and services is to involve the customer in each step. Early and ongoing customer input distinguishes successful from unsuccessful products. Research supports involving customers at the idea generation stage, and from product development on.

Second, boundary-spanning teams involving customer, 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 can be exploited at each stage of the buying process and can identify any problems, barriers or difficulties before they harm new product prospects. Firms that can develop such external relationships may gain an advantage over their competition.

Third, integrating outside members in a product development team requires balancing the contributions from insiders and outsiders. Insider rewards earned for team performance work best. Typically they involve money or career enhancing promotions. However, outsiders are not employees and do not enjoy such rewards. The question of how to reward external team members requires careful consideration.

Fourth, customers must manage the external members contributions to avoid a "temporary" characterization. Suppliers and channel members have explicit, long-term relationships with manufacturers and are less subject to

such labels. The critical relationship is with the customer. Companies can use special status like "associate" to aid in reinforcing the customer-company relationship.

Data must get to the right people

Fifth, managing the company-consumer interaction requires resources, an effective organizational structure, and a well implemented information technology infrastructure. In daily operations, customer information is generated which can be helpful in refining customer profiles. For those data to be useful, they must get to the right decision maker. In other words, the trick is to recognize them, capture them, and get them to the right people. In this instance, the technical support and customer satisfaction personnel should be trained in identifying various types of lead users. Moreover, the company should structure information handling procedures to channel relevant information and the identity of the customer to the new product development team.

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This summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article* in toto *to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material presented

Executive summary and implications for managers and executives

Go on, talk to your customers – You might learn something

Industrial marketers have long used customer comments, complaints and feedback as a contributor to the product development process. In doing this, they have advanced ahead of their colleagues in consumer marketing. Partly, this practice in industrial markets reflects the nature of those markets since they have fewer customers, customization is common and the purchase is often of significance to the customer's business. Industrial markets also enjoy more frequent and extended contact with the customer through a professional salesforce making it easy to gather feedback.

The challenge from Pitta, Franzak and Katsanis is to take these lessons and practices from industrial markets and apply them in a consumer market without submerging in an avalanche of information. Furthermore, we need to guard against losing effective control of the product development process while avoiding the "Chinese whispers effect" implied by long marketing channels. This latter problem – characterized by Pitta et al. *as the "inventory acceleration" effect – results from only a limited amount of information passing up the channel. Even where managers act responsibly in response to information received, the result is still overproduction and excess inventory since those managers act on incomplete data. It is the system failing rather than individuals within the system.*

Pitta et al. *seek to develop approaches to improving information flow within a system, especially in the context of new product development. Their main thrust is how to introduce and manage customer input in that process, although with that goes the assumption that "middle" parts of the marketing channel will also provide valuable feedback. The question of controlling customer input also arises since, as Pitta* et al. *observe "…boundary-spanning teams need effective control elements that bridge the gap between internal and external members."*

So what are the key lessons from industrial marketing and how do we create a system allowing for customer input into new product development without losing management control? Pitta et al. *take a view that the problem is one of organizational learning rather than individual skills or management actions. They argue for an open-minded approach to enquiry that seeks to involve customers without allowing them to direct matters. For industrial marketers, this is a familiar problem – do we allow the customer to dictate the product development process through demands for changes or improvements, or do we use that feedback to inform the process by allowing design engineers and manufacturing process managers to understand how the product is used* in situ?. *Central to this issue is how boundary-spanning personnel such as salespeople approach the challenge.*

Salespeople and, to a lesser extent, marketers experience some conflict in their role – on the one hand they act as the customer's friend and advocate within an organization while at the same time they seek to inform and persuade those customers about the products on offer. Where customer focus has not got beyond the marketing department, this presents a problem since engineers, financial managers and production people do not necessarily view the customer as the center of the business's activities, often taking an adversarial approach to customers rather than the cooperative approach implied by customer focus. Central to modern product development is the belief that it is up to the manufacturer to change rather than the customer,

and this means that boundary-spanning product development is a requirement of customer focus and not a luxury we would like to indulge in if we dared to take the risk.

Pitta et al. *propose that marketers should develop the idea of lead users – individuals or companies that seek the support of the maker in getting the most from their purchase. In the process of dealing with these kinds of customer concerns, managers must look closely at the products they sell and their fitness to solve customer problems and provide the benefits intended. It is but a short step to say that these responsive customers are worth pulling into a boundary-spanning team looking at product development and improvement.*

Whatever your business, it is important to set up systems for customer input right along the development process and Pitta et al. *set out several key lessons:*

- *Create systems and teams crossing the boundaries between firms and their customers. Bring in the end consumer, the supplier and the retailer if their information and input will further assist in understanding consumers' requirements and expectations as well as the practical issues relating to product development.*
- *Think about what rewards accrue to outsiders from involvement – it is unlikely that the customer (or other outsider) will contribute entirely freely. The benefits from involvement must be clear. One French toy maker and mail order business uses a panel of parents and grandparents to help develop and test products. In return, these people get some direct benefits from the company in terms of product discounts and free products, but the company reckons that they also act as enthusiasts for the business by promoting it, and its approach, to their friends and relatives.*
- *Make clear that the customer input is critical to the process rather than some kind of cosmetic exercise in public relations. Try to strengthen the lead users' position by giving them a title or role within the team.*
- *Invest in information management systems but don't get too tied up with complex technical issues beloved of IT people. The process of data collection and capture is as important as the management of those data once they are gathered. A management information system without customer service, sales and marketing people involved in its design will end up worse than useless.*

No company can absolve itself from the responsibility for driving the new product development process. Any team crossing the boundaries of the business needs to know that it is not creating the new products but is providing the necessary framework for an internal system to operate effectively.

(A précis of the article "Redefining new product development teams: learning to actualize consumer contributions." Provided by Marketing Consultants for MCB University Press.)