

*White Paper on Customer-Centered Innovation*

# FOUNDATIONS

## Customer Needs and Innovation Effectiveness

by Donald Ross PhD, MBA

### Research Shows Understanding Customer Needs is Critical for Innovation Success

Research on product development and innovation effectiveness over the past decade has shown that understanding customer needs is critical to success, and that this understanding should be developed and shared by cross-functional teams, not just by one department or function.



Recent research among product and service companies across industries is providing evidence for the types of business process factors associated which enhanced innovation performance. The innovation processes used by companies with high new product success rates are considerably different than those used by less successful firms. The best innovators make customer needs discovery a key part of their front-end of innovation process. That leads to better idea generation, concept development, new product success rates, and profitability.

### Success Rates and Innovation Process Research

The Product Development and Management Association (PDMA) Foundation's Comparative Performance Assessment Study (2005) included over 400 firms across industries. The survey gathered various new product development metrics such as percent profit and sales from new products, new product success rates, survival rates for ideas through each step of the innovation process, as well as what management in the firms considered to be the top factors for success and failure.

### Separating the Best Innovators from the Rest

To examine factors associated with enhanced new product performance the researchers divided the study sample into two groups. The Best group include those companies with new product success rates in the top 25%. The Rest group consisted of all the other companies. They then examined innovation process differences between the higher and lower performing groups.

Learn more about Innovare's customer-centered approach to innovation!

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# Understanding Customer Needs Leads to Stronger Ideas

## The Top 25% of Firms Dramatically Outperformed the Rest on Key New Product Metrics

For the Best group, over seventy five percent of new products were considered successful. For the Rest, under fifty four percent of their new products were successful. The performance gap between the Best and the Rest in percent sales and percent profits from new products was particularly impressive. The Best outperformed the Rest by more than a 2:1 factor on those key metrics.

	The Best	The Rest
% Firms	24%	75%
% New Product Success	75.5%	53.8%
% Sales from New Products	47.6%	21.4%
% Profit from New Products	49.1%	21.2%
PDMA Foundation's CPAS 2005		

## The Best Create Stronger Ideas in the Front End

The survival rates of ideas as they flowed through each step of the innovation process was compared. The Best relied on fewer ideas for each new product success. Further, the ideas developed by the Best survived the rigors of analysis, development, testing, and commercialization better than those of the Rest. The idea effectiveness of the Best was more than twice that of the Rest. The Best appear to be developing stronger ideas and have a more effective front end process in place.

	The Best	The Rest
# Ideas for One New Product Success	4.0	9.2
% Surviving Idea Screen	66%	68%
% Surviving Business Analysis	77%	66%
% Surviving Development	80%	68%
% Surviving Test	91%	81%
% Surviving Commercialization	88%	82%
PDMA Foundation's CPAS 2005		

"The number one factor leading to new product success across all companies was understanding customer needs."

PDMA Foundation's CPAS 2005

## Top 5 Factors for Innovation Success and Failure

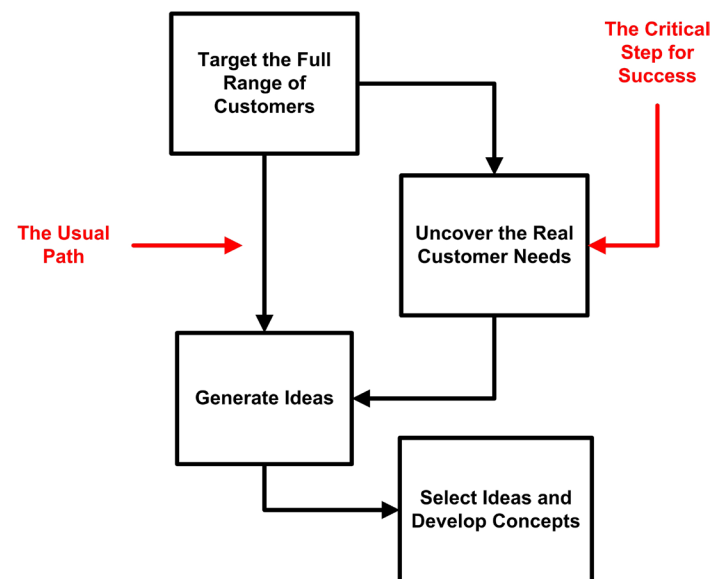
The managers surveyed in the study were asked to identify and rank those factors that contributed to either new product success or new product failure. Understanding customer needs was considered the top factor leading to success. This was followed by having a systematic innovation process in place. The top reason stated for failure was having an ineffective innovation process, while not understanding customer needs was the second most important factor associated with failure.

Success	Failure
1. Understanding customer needs	1. Ineffective process
2. Systematic process	2. Not understanding customer needs
3. Management support	3. Resource management
4. Cross functional teamwork	4. Insufficient funding
5. Right skill	5. Lack of clarity in objectives
PDMA Foundation's CPAS 2005	

## The Best Used a Customer-Centered Front End

The Best innovators created stronger ideas in the front end of innovation compared to the Rest. Further, after idea generation they benefited from a higher idea success rate and new product performance.

The primary process differentiator between the Best and the Rest pointed directly towards their focus on understanding customer needs as part of a systematic front-end of innovation process. The Best innovators are taking a customer-centered approach to innovation.



**The Best innovators uncover customer needs as part of a systematic front-end process performed by cross-functional teams.**



# Voice of the Customer is Considered the Best Approach

## Customer Needs Knowledge is “Sticky” and Difficult to Uncover

Leading innovation experts insist that customer needs knowledge is “sticky” – it is deeply embedded in the customer’s environment and traditional research methods do not uncover it.

The market research approach called **Voice of the Customer**, in which a cross-functional team pays site visits to customers to hear and observe first-hand the environment in which they work or live, has been cited as a particularly appropriate and useful methodology for obtaining information about customer needs.

The references that follow are examples of the research that supports and describes methods of gaining insight into customer needs to improve a firm’s ability to develop products that will meet these needs.

## Drivers of NPD Success: The 1997 PDMA Report

Abbie Griffin et al. identified Voice of the Customer as one of the top tools in widespread use, particularly among the top-performing companies. Their sample of 383 corporations was “more manufactured-goods oriented than service-oriented” and sold “predominantly into the business-to-business market rather than directly to consumer,” although the researchers felt it provided “reasonable representation across key demographics.”

The study differentiated the “best” companies (those “above the mean in relative success of their NPD programs,” at least “in the top third of their industry” and “above the mean in market-financial success from NPD” from the rest.

The study found that “the Best do significantly more qualitative market research than the Rest and the market research tools they use emphasize in-depth qualitative understanding over quantitative prediction and forecasting, and ongoing interaction with fewer potential customers over longer periods of time rather than one-shot, quick feedback.”

The top new market research tool was “Voice of the Customer which uses in-depth situation-based interviews to uncover needs.”

“Drivers of NPD Success: The 1997 PDMA Report,”  
September, 1997

## Spark Innovation through Empathic Design

How can companies identify needs that customers themselves may not recognize? A set of techniques Harvard Business School professors Dorothy Leonard and Jeffrey Rayport call “empathic design” can help resolve this dilemma.

Its basic principle is observation, watching customers use products or services. But the critical twist is that such observation is conducted in the customer’s own environment, in the context of normal, everyday routines. In such a context, the company is privy to a host of information that is not accessible through other observation oriented research methods such as focus groups or usability laboratories.

The techniques of empathic design - effectively gathering, analyzing, and applying information gleaned from observation - are familiar to top engineering/design firms and forward-thinking manufacturers.

Harvard Business Review November, 1997

“Companies can identify needs that customers themselves may not recognize through empathic design.”

## Tapping Lead Users to Create Breakthroughs at 3M

Most senior managers want their product development teams to create breakthroughs, new products that will allow their companies to grow rapidly and maintain high margins. But more often they get incremental improvements to existing products.

Eric Von Hippel et al. describe a project team in 3M’s Medical-Surgical Markets Division that became acquainted with a method for developing breakthrough products: the lead user process. The process is based on the fact that many commercially important products are initially thought of and even prototyped by “lead users” - companies, organizations, or individuals that are well ahead of market trends.

**The basic principle is watching customers use products or services in the customer’s own environment, in the context of their everyday routines.**

# Understanding Needs Enables Breakthrough Innovation

## Today Voice of the Customer Includes the Latest Research Approaches

### Creating Breakthroughs at 3M - (Cont.)

The lead user process transforms the job of inventing breakthroughs into a systematic task of identifying lead users and learning from them. The 3M project team successfully used the lead user approach and proposed three major new product lines and a change in the division's strategy that has led to developing breakthrough new products.

Harvard Business Review August, 1999

### Merging of Lead User and Voice of the Customer

Lead user and Voice of the Customer approaches have come together for many innovative organizations. One of the first questions the innovation team must answer when designing a VOC project is: Who do we want to visit? To answer that question the team needs to define various types of customers who will provide the most insights regarding customer needs.

Selecting which customers to include often begins with discussion on the more traditional customer segmentation schemes such as product line, geography, demographics, where in the value chain, existing customers, lost customers, the competitor's customers and so on.

Customer selection can also be based on customer characteristics such as being early adopters, serial inventors, high performance customers, or customers within exaggerated performance environments. Often these customers are faced with having problems where no solutions exist, so they create solutions for themselves. These are the lead users.

Research among different customer segments such as lead users and serial inventors allows the innovator to explore exaggerated customer needs and apply those insights for breakthrough innovation

Innovare included lead users while working with **Bayer** to define breakthrough innovations in the construction industry. The voice of the customer research included value chain members in geographic settings such as war zones and high impact hurricane areas.

Conversely, it may also be helpful to include lagging customers or lower performing customers and examine the contrasts in customer needs between the high and low performing customer groups.

While working with **Xerox** on their breakthrough commercial digital printing innovations, Innovare included various contrasting groups. This helped the Xerox innovation team understand clearly the customer context and full set of customer needs.

### How Customers Think: Essential Insights in the Mind of the Market

Readers who are already users of Voice of the Customer (VOC) or other exploratory in-depth techniques will recognize the focus on small samples, open ended interviewing, observation, story telling, using projective approaches, and inductive data processing. These are similar to the processes Gerald Zaltman describes as being key.

For Zaltman's Metaphor Elicitation Technique, as well as many of the other VOC processes, the point is to move beyond what the customer knows or thinks about a product or a situation, and even to move beyond what s/he explicitly feels, into the area of "latent needs" that Zaltman calls "the unconscious." This area can be tapped into by using projective techniques such as personification of brands or products, or through the use of metaphors as Zaltman describes.

Zaltman writes, "managers can tailor their communications to consumers. But even more important, they can envision new, more effective ways to respond to those needs through specific products and services." Since metaphors are central to consumers' imagination, "understanding consumers' metaphors enables managers to imagine the nature of consumers' needs with respect to discontinuous innovations outside of consumer experience and beyond the reach of more conventional, literally oriented research tools."

2003, Harvard University Press: Gerald Zaltman

The Best innovators capture not only what the customer says they need but try to understand their unconscious or "latent" needs at rational and emotional levels



# Friction Points and Work-Arounds Indicate Unmet Needs

## Voice of the Customer Should Be Owned by the Cross-Functional Team

### Getting the Most Out of Technologists

Dave Walden at the Center for Quality Management states that technologists often claim that customers and users don't know what they need and, therefore, it's a waste of time to ask them: "technologists need to tell them what we know they need." In fact, customers and users often don't know (or can't say) what they need; and, when they are asked what they want, too often they describe something which they then don't buy after it is developed.

However, technologists are wrong in thinking this means we don't need to ask customers and users what they need. Firms must enable technologists to draw on relevant sources of innovation and to make the appropriate tradeoffs. To this end, explicit methods are needed.

First, it is necessary to both listen to what users and customers say and to observe what they do. The latter provides context that helps us understand what the former might mean.

2003, Spring. Center for Quality of Management Journal

At Innovare, we find that to successfully hear what customers and users say and see what they do, it is important to immerse the technologists and marketers into their customer's environment. This joint effort ensures that they develop a deep and shared understanding of customer needs. In general, marketing people are good at hearing what customers and users have to say, while engineers are good at seeing what customers and users are doing. The diversity in a cross functional team enables the organization to develop greater insight than if a single function did the work on their own.

It is necessary to both listen to what customers say they do and observe them in their natural environment to uncover their true behaviors and processes.

**Vocal Insights**<sup>®</sup> is Innovare's voice of the customer service. It is designed to immerse cross functional innovation teams into their customer's world so they can develop a deep empathic understanding of explicit and latent customer needs to guide their innovation efforts.

Contact Innovare to learn more about our Vocal Insights and other customer-centered approaches to innovation

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