Challenges in Implementing a Value Innovation Portfolio

Collecting the Voice of the Customer

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Our book, *VIP Management – Achieving Double-Digit Growth through Customer Value*, emphasizes the need for companies to understand, as part of the portfolio management process, what customers value. The book proposes a way of thinking about and managing the portfolio process to accomplish this.

Often, however, companies find the need to understand customer value very intimidating, especially those with large portfolios of products and services. With an unremitting emphasis on speed to market (reinforced through media coverage such as *Business Week's* March 27, 2006 cover story, "Is Your Company Fast Enough? Speed-to-Market is now the ultimate competitive weapon"), companies may believe that collecting voice-of-the-customer (VOC) data is too time consuming. They may rush past this critical foundation work in a misguided attempt to get products to market more quickly.

Being fast to market doesn't necessarily preclude an in-depth understanding of the market you plan to capture. You can take advantage of all the information collected for prior projects and can focus on high-leverage opportunities without wasting time on unnecessary research. And, since carrying out activities serially is sure to increase time to market and doing tasks simultaneously minimizes total elapsed time, your approach should incorporate *parallelism*. Our book recommends exactly this: tackling each opportunity by addressing multiple dimensions in parallel and applying strong management to orchestrate the different elements.

Not all opportunities are created equal. You need to realistically evaluate each to optimize your investment in innovation and in choreographing resources to solve the customer's problem. This article describes PDC's recommended approach to

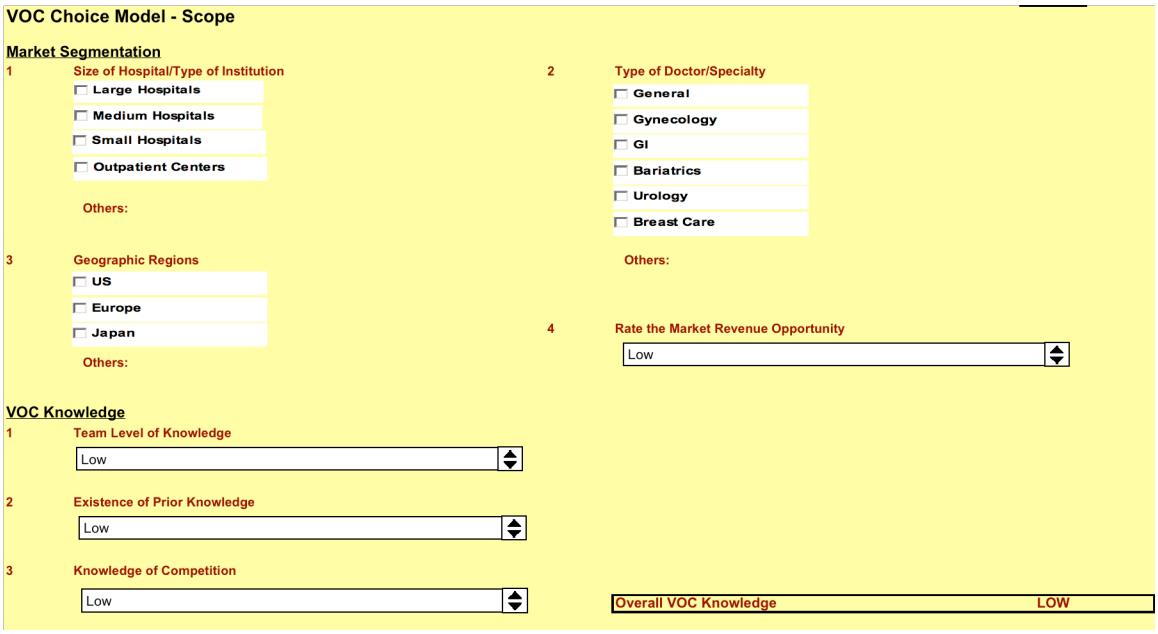
balancing the need to understand the voice of the customer with the potential importance of an opportunity.

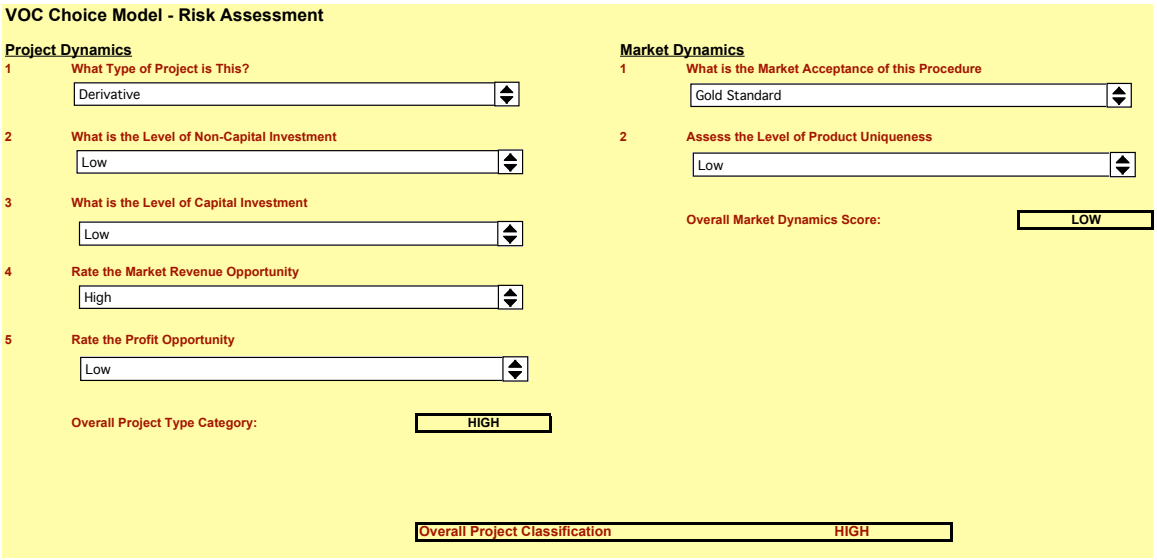
Using Customer Data for Competitive Advantage

When you propose a new product offering for the portfolio, your first activity is to assess the level of market knowledge and subsequent research the program requires by asking:

- What type of product do you expect to produce -- platform, transformational, derivative, or sustaining?
- How large is the market opportunity?
- What is the market acceptance of the product concept: gold standard? Accepted? Emerging with early adopters? Lead user only? New to the world?
- How unique is the product?
- What is the level of knowledge among the team members?
- What prior knowledge exists?
- What is the knowledge level of the competition?
- How much capital budget is planned?
- What is the level of non-capital investment (labor and expenses)?
- What are the profit expectations?

The responses to these questions help the team identify the level of VOC research appropriate for a particular project (see Figure 1A and 1B). For example, a transformational product will change the way customers do their jobs. But people naturally resist change unless they have a compelling reason to do so. It is therefore critical to understand what problems people currently face in doing their jobs so you can create a product with a value proposition sufficient to drive customers to change -- and try your product. Extensive customer research becomes less critical for a product that is not particularly unique, where your aim is to become the low-cost producer. (Later in this article we analyze responses to the other questions above.)





Figures 1A & 1B: Forms like these can help capture responses to the questions that will define the scope of the VOC project.

We recommend that companies conduct an in-depth, robust VOC program such as PDC's Market Driven Product Definition (MDPD®) for each group of customers for which you expect to supply products. Note that we didn't say *for each product line*, since one customer may use several of your products. Your job is to thoroughly understand what gets in the way of the customer doing his or her job. You then can apply this data to many projects, both current and future, since

customer data doesn't change over time unless marketplace discontinuities occur that change the way people do their jobs. (One such discontinuity might be the release of a new product by a competitor or by your own company. Another is a major market disruption, exemplified by such introductions as the personal computer, spreadsheets, the i-Pod, and the Roomba robotic vacuum, which necessitate new research to understand how the customer's world has changed.)

You should store the data you collect in a database accessible to all product development and portfolio management teams. This doesn't have to be elaborate. Many companies start by simply creating text or word-processing files of interview transcripts and using search capabilities such as Apple's Spotlight to locate all documents that reference a topic of interest. Others may use a database management system with built-in search capabilities; others may use more sophisticated database tools to mine the data. The most important thing is to make the data available to teams beyond the group that collect it.

The Elements of a VOC Program

A full voice-of-the-customer program includes

- A definition of which sets customers might have unique problems (these sets could be defined by geography, size of operation, type of work the person does, or type of institution or company)
- Interview guides to foster open-ended exploration during the interview
- Observation of customers *doing their jobs*
- Development of interview skills enabling the team to perform qualitative interviews
- Verbatim transcripts filled with lots of examples
- An image diagram describing what it is like to be a customer
- Customer requirements defining what functionality is missing for the customer
- A requirements diagram that organizes the requirements so they can be shared with other people in the organization
- Defined measurements for each requirement
- Analysis of how well each of the existing solutions meets the key customer requirements using the defined metrics

Quantitative research to help the team understand the validity of the requirements, their priority (all requirements are not created equal), and statistical significance for the differences between market segments.

As we describe in the VIP Management book, many companies use the research done for individual projects to drive their innovation portfolio development. When your company does this kind of research and your competitors don't, you have the advantage in terms of understanding markets, customers, and trends in a way that allows you to create innovative solutions.

		Days per Team member			Expenses	Elapsed Time
		Score H	Score M	Score L		
Gather VOC Baseline	**1. Baseline Understanding**	0.5	0.5	0.5		1-2 Weeks
	2. Customer Segmentation	0.5	0.5	0.5		
	3. Competitive Analysis	0.5	0.5	0.5		
	4. Gather reactive voice of the customer	0.5	0.5	0.5		
Gather VOC Inputs	**1. Understand Opportunities**	0.5	0.5	0.5		4-8 Weeks
	2. Plan customer interviews (WS # 1)	1.65	1.15	0.5		
	3. Develop interview guides & schedule visits (WS # 2 & WS # 3)	1.35	1.1	0.25		
	4. Gather customer data (WS #4)	22	10.5	3.25	$10-50K	
	5. Analyze customer data (WS #5)	0.85	0	0		
Translate & Characterize Needs	**1. Develop customer (needs) requirements diagram (WS #6 & WS # 7)**	2	1.55	0.8		5-9 Weeks
	2. Develop metrics (WS #8)	0.71	0.71	0.7		
	3. Survey on customer requirements (WS #9 & WS # 10)	0.5	0.25	0	$50-100K	
	4. Analyze results - prioritize customer requirements- CTQs (WS #11 & WS #12)	0.5	0	0		
Determine Product Concepts & Features	**1. Brainstorm ideas (WS #13)**	2	2	1		7-17 Weeks
	2. Generate product concepts & features (WS #14)	1	1	0.5		
	3. Analyze & evaluate product concepts & features (WS #15)	2-8 Weeks Elapsed	1-4 Weeks Elapsed		$5-20K	
	4. Confirm customer acceptance of performance (WS#15)	4-8 Weeks Elapsed	2-4 Weeks Elapsed		$50-100K	
	5. Select product concepts & features (WS #16)	1	1	0.5		

Figure 2: The steps involved in a typical VOC program. Activities can happen concurrently, and total elapsed time can be measured in weeks, not months.

The Relationship of VOC to Product Types and Investment

You'll answer most of the questions we raised earlier during the VIP management process. Let’s take a closer look at some of the questions.

Product Type

Earlier, we identified four types of products you might develop: platform, transformational, derivative, or sustaining. Each relates in a particular way to VOC research. For example, companies often believe that customer research isn't important if the product concept is a new platform for an existing set of products, since the new platform typically provides functionality equivalent to that offered by the existing platform. But though their functionality is the same, new platforms are intended to outlive the individual products they make possible. To ensure the platform's longevity, you need to conduct full-blown VOC analysis so you can plan where the platform should be in a year, or two, or five.

A transformational product is a breakthrough that will change the way the customer does his or her job. Frequently, these types of products come about not as a result of extensive customer research but as a result of a robust innovation program. A strong voice-of-the-customer program is particularly critical in the case of a transformational product, especially if the product affects how customers accomplish their missions. You need hard evidence to back up decisions about exactly how the product will provide its new capabilities. For example, in developing its automated patient record-keeping system, office technology company Pitney Bowes visited hospitals and clinics to collect VOC data. As expected, medical staff used patient records for recording information and archiving. However, Pitney Bowes discovered as a result of its VOC work that patient records had many more purposes, including giving instructions, tracking work, and directing healthcare workers. Had the company not observed its customers and probed deeply, it would have missed these additional uses of patient records -- and missed the opportunity to innovate in a way that provided true customer value in a transformation product breakthrough.

Creating a derivative or incremental product offers a perfect opportunity to mine your existing database of customer information. Often, a VOC program produces a set of solutions to be realized over time, so features for the next incremental product have already been defined. If you haven't yet done VOC research and you are creating an incremental product for a commodity market, doing the research may prove invaluable by uncovering a market differentiator of which you weren't

aware, allowing you to transform what would have been a commodity product into a much more desirable one.

A *sustaining* project is driven by the need to solve a problem created by the product itself, either in manufacturing or in the field with customers. You may need to change the manufacturing process, fix a software bug, or correct existing functionality that did not perform as advertised. In this case, since you aren't changing the functionality of the product but rather are fixing existing functionality, you don't need to do additional VOC research.

Size of the Market Opportunity

If preliminary work has determined that your concept has large market potential, like the i-Pod, memory sticks, or a hybrid golf club, you don't want to have to iterate the product to get it right. You want to conduct a robust VOC project first to be sure you understand all the nuances of the market space. With this knowledge, you can reap the rewards of being first to market with a product that can capture the imagination of a major segment of the target population.

If the market opportunity is medium to small but your company needs to address a specific problem to remain competitive, you can afford to cut some corners. You can combine the team's knowledge of the environment with knowledge gleaned from your existing database of customer transcripts, requirements, and feedback from prior products. Rather than undertaking a full VOC project for an incremental product or a market opportunity of medium size, you might conduct a survey.

Market Acceptance of Product Concept

The mere fact that your new concept represents the accepted way of accomplishing the desired result (the so-called gold standard) would not, in itself, determine the scope of your VOC effort. However, in a case in which your customers regularly use the approach behind your new concept, you could derive benefit from ensuring that your approach will beat the competition. This potential benefit could push you to conduct a full VOC program.

If your new concept or approach hasn't yet become standard operating procedure among your customer base (a situation sometimes referred to as an emerging technology with early adopters), you stand to benefit greatly from a robust VOC process since it will give your product an opportunity to shine. And, with only lead users using the product concept, you want to learn as much as possible from your VOC work about possible market opportunities. (See the discussion of transformational products in the *Product Type* section above for ideas about how VOC fits with new-to-the-world concepts.)

Competitive Sustainability (Product Uniqueness)

If your product concept is unique -- perhaps you have a patent or you will be the only one with such an offering -- you need to be certain you offer the best possible product to protect your competitive position. A robust VOC program gives you the best shot at accomplishing this. If alternatives exist to your proposed product but they are flawed, the attractiveness of the market opportunity can drive your decision about whether to take advantage of the opportunity to outpace the competition with the wow factor. If the offering is a commodity product, VOC research won't pay back at the same level as a cost reduction program might.

Investment (Both Non-capital and Capital)

When you anticipate that the proposed project will require a high level of investment intensity (the sum of all types of investment), you have a lot to lose if the solution doesn't match customer problems. In this case, a full voice-of-the-customer program can yield high payback. When time to market is a factor, you can conduct the customer research in parallel with the development work. The only caveat is that you need to be willing to make changes to development activities if they don’t map to customer problems or if you find a major customer problem that the new concept doesn't solve. In the case of irresolvable differences between what the market requires and what you are working on, you may even need to kill a project.

Knowledge Level

There are three dynamics involved in knowledge: level of knowledge among the team members, prior company knowledge, and knowledge level of the competition. If the team has a high level of customer knowledge, it can proceed with out any more VOC work. In the case of a medical product, for example, each team member should be able to describe the experience of each stakeholder (physician, hospital, patient) with the procedure in question. Otherwise, those who don't have experience should do some customer visits, with the number of visits driven by other factors described above such as type of product, size of opportunity, and investment level.

Knowledge of the competition is one of the most difficult types of data for companies to collect. On-site visits with customers who use competitor's equipment are an excellent way to gather this information. But the search for competitive data alone does not usually justify conducting a robust VOC program. Market dynamics, business opportunity, and type of product are better drivers for undertaking VOC research.

The Range of Ways to Collect VOC

As we discussed, the type of product, size of the market opportunity, and a range of other factors help determine whether you want to conduct a full-blown VOC effort (see Figure 3). Happily, there are alternatives to undertaking a full program that can help you collect enough voice-of-the-customer data to support decision-making in lower stakes situations. A database containing the transcripts and requirements from previous voice-of-the-customer activities can provide huge leverage to reduce the scope of work that needs to be done. (Note that a database, such as a CRM database, containing only features requests and not the probing information that characterizes VOC research, is of limited value.)

VOC Phases	Gather VOC Baseline				Gather VOC Inputs					Translate & Characterize Needs				Determine Product Concepts & Features				
Research Methods / Outputs	1. Baseline Understanding	2. Customer Segmentation	3. Competitive Analysis	4. Gather reactive voice of the customer	1. Understand Opportunities	2. Plan customer interviews	3. Develop interview guides & schedule visits	4. Gather customer data	5. Analyze customer data	1. Develop customer (needs) requirements diagram	2. Develop metrics	3. Survey on customer requirements	4. Analyze results - prioritize customer requirements- CTQs	1. Brainstorm ideas	2. Generate product concepts & features	3. Analyze & evaluate product concepts & features	4. Confirm customer acceptance of performance	5. Select product concepts & features
Methods to Understand Customers	H: Received a high overall project classification in Risk Assessment sheet. M: Received at least one medium in project dynamics and/or a medium in market dynamics but no highs in the Risk Assessment sheet. L: Supplement information or check for omissions																	
Call Center/Service Center Monitoring									L	L	L							
Casual Contacts								L		L	L	L						
Conventions and Trade Shows								M		L	L	H						
Critical Incident Evaluation									L	M	M							
Customer Panels								L		L	L	L					M	
Customer Service Audit								L	L	M	M							
Focus Groups								L		L	L	M						
Interviews on site								H	H	H	H	M					M	
Observation Research Controlled Environment								M	M	M	M							
Observation Research Natural Environment (Gemba/Walks/Ethnography)								H	H	H	H							
Segment Panels								L		L	L							
Surveys										L	L		X					
Methods to Gain Competitive Information																		
SWOT Analysis													X					
Perceptual Map - Opportunity Map													M/H					
Benchmarking													H					
Review Transcripts of Doctors using competitive products													H					
Methods to Obtain Feedback on Concepts																		
Conjoint Measurement																	H	
Critical Incident Evaluation																		
Customer Panels																	H	
Customer Service Audit																		
Focus Groups																	M	
Interviews																	H	
Observation Research Controlled Environment																	H	
Observation Research Natural Environment																		

Figure 3: This matrix enables companies to evaluate which VOC research methods will be most effective, depending on the characteristics of the proposed product.

In some cases the data may be second-hand and may not offer a full ethnographic dimension, but it is commensurate with the level of the product or opportunity. Alternatives to full VOC programs include:

- Working with customer advisory groups
- Gathering data from partners and third-party distributors such as Wal-Mart, Target, or Home Depot who gather their own data about customer needs
- Interviewing customer not at their sites (at trade shows, for example), which can yield good customer data especially if you probe well

- Home office visits where customers come to your corporate headquarters to learn more about your future products
- Attending user group meetings where customers present their problems to you

IBM, for example, obtained input from a customer advisory group by inviting a group of senior information technology (IT) managers from among its major customers to an off-site meeting at a resort during which it set up group discussions and customer brainstorming sessions about the future of IT. This type of activity is definitely a form of voice-of-the-customer research, which can either supplement an existing VOC program or stand alone when the opportunity does not warrant a full VOC undertaking.

In fact, if you have the right mind set, almost any interaction with a customer -- from customer support calls to Web visits -- can offer the opportunity to gather voice-of-the-customer data.

With the proper systems in place, customer support, tech support, or field service staff people can help collect voice-of-the customer data. Support staff need to be trained in questioning techniques. Instead of simply getting a customer to describe a desired feature, your service and support staff should be taught to ask "What problem would that solve?" to elicit deeper information about the customer's environment. The sales force and marketing support staff, who are always out talking to customers in sales mode, can gather competitive data and incremental product requirements data for lower risk products.

If your product includes a training component, feedback can come both directly and indirectly from customers who attend training sessions. Directly, customers tell you what they need that isn't in the product. Indirectly, you can observe where they have problems learning how to use your product to do their jobs. These are opportunities to make your products more intuitive or more efficient. If your product includes a consulting component, the consultants who work directly with customers also can gather customer requirements.

The product testing phase -- whether conjoint analysis, human factors testing, clinical trials, or beta testing -- also offers an opportunity to learn things you can integrate into the next version or release if it's too late to address particular problems in the current version.

Finally, with the right approach, you can craft customer satisfaction surveys and online Web site surveys that include an in-depth component to ensure the data you gather by these methods gets beneath the surface of the customer's input.

The Value of Customer Value

Once you define the customer problem, the solution is in sight. Armed with factual information addressing your customers' problems, you can unleash your company's designers and developers to create a solution. Input from the VOC process, combined with strategic analysis, can yield assessment tools like the Product Development Scorecard shown in Figure 4.

Product Development Scorecard

Scoring Criteria:	
	1 - World-Class (Outstanding)
	2 - Good (This Section Was Done Well)
	3 - Average (Adequate)
	4 - Fair (Should Be Better)
	5 - Poor (Very Inadequate)

Understanding of User Needs		Score:
1 Understand	Needs of potential customers	
	Needs of potential users	
2 Answer the following: How does the product…		
	Solve user and customer problems?	
	Address user and customer needs?	
	Provide value to users and customers?	

Strategic Alignment/Charter Consistency		Score:
1 Team must be aware of…	Target market for product	
	Anticipated value of proposed product to customer	
	How the goals will meet corporate financial and strategic goals	
2 Product must be aligned with long-term strategic plans		
3 Strategic plans should include goals for…		
	Product development	
	Technology development	
	Market development	
	Personnel development	

Competitive Analysis		Score:
1 Team must know:	Which products are currently offered in the target market	
	What products are likely to be offered by competitors at anticipated product market release date	
	What solutions competing products offer or are likely to offer in the future	
2 Team members must have:	Knowledge of and access to competing products	
	Adequate competitive forecasting skills and / or tools	

Product Positioning		Score:
1 Team and management must agree on:		
	Definition of target market segment	
	Identification of potential users and customers	
	Proposed product value	
2 Team must:	Accurately assess the needs of target users and customers	
	Accurately identify the problems of target users and customers	
	Rationalize offering with the existing product line	

Technical Risk Assessment		Score:
1 The team should:	Use the decision criteria to identify high-risk facets of the project	
	Ensure that plans are in place to address those risks early in the Development phase	
2 Assessment should include review of the following risks		
	Technical	
	Manufacturing processes	
	Marketing development plans	

Priority Decision Criteria List		Score:
1 Provide a list of key program priorities (not just product priorities)		
2 Criteria defining what the team need to provide to:		
	Potential customers	
	Company	
3 A decision list including the following:		
	Manufacturing cost target	
	Required time to market	
	Quality goal	
	Required features	

Regulation Compliance		Score:
1 Team must identify all relevant regulatory issues:		
	Statutory	
	Environmental	
	Health	
	Safety	
2 Team must be aware of any issues with regard to:		
	Localization	
	Formal and informal market segment standards	

Product Channel Issues		Score:
1 Team must identify or develop a plan for ensuring that:		
	Sufficient product channels are in place	
	Sufficient product support is in place	
	Sufficient staff and resources are available to execute the plan	
2 The plan should identify how the product will be sold in the target market segment		

Upper Management Project Endorsements		Score:
1 Team must ensure that management is aware of the project's		
	Strategic implications	
	Financial implications	
2 Team must ensure that management supports the project and the project strategy		
	Staffing	
	Financial resources	

Total Support from the Organization		Score:
1 Team must develop:	Project Schedule	
	Financial projections	
2 Team must detail:	Staffing requirements	
	Funding requirements	
3 If staffing and funding are insufficient, management and team may jeopardize targets for:		
	Time to market	
	Revenues for product	

Figure 4: Combining a deep understanding of user needs with other criteria such as competitive analysis, product positioning, and regulation compliance yields a multifaceted way to evaluate potential new products without overreliance on financial measurements.

The VIP model provides for the accumulation and mining of customer knowledge in a requirements database. When used effectively, this data can deliver the greatest return on your product development investment. The questions raised in this article are really about defining the risk of pursuing a concept, idea, or product, and then deciding how much of an investment is worth making to minimize or mitigate the risk. To this end, knowledge of what your customers value is the most important competitive differentiator your company can possess.

PDC is an internationally recognized product development consulting firm. We focus on optimizing processes throughout the life cycle, from strategy to product retirement. Fortune 500 and other high-growth companies look to us for an "inch-wide, mile-deep" approach that yields measurable and lasting improvement.

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