



*Leading thinking  
for lasting results*

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# Customer-Inspired Innovation: An Introduction

## Effectively Listening to Your Customers to Drive Winning Solutions

**June 8, 2004**

# Defining “Voice of the Customer”

**“VOICE” = an actual quote captured directly from an individual, usually in a face to face meeting**

**“CUSTOMER” = anyone whose interest you represent or whose perspective can add value to your understanding**

**While the VoC method I will describe may be used for many purposes, I will focus here on its application in product and service development**

## Most companies realize that customer-driven products & services are more likely to succeed ...

“A provocative finding of recent studies is that not only does a strong customer focus improve success rates and profitability, but it also leads to reduced time to market. Contrary to myth, taking a little extra time to execute marketing actions in a high-quality fashion does not add extra time. Rather, it pays off, not only with higher success rates, but in terms of staying on schedule and achieving better time efficiency.”

— *The PDMA Handbook of Product Development*

“In 80% of the [product] successes, the developers either had a greater than average level of prior market knowledge, and/or collected a greater than average amount of market information and used a greater than average amount to set the product specifications. . . . This ability to separate success from failure 75% of the time indicates that while market information processing does not guarantee success, it raises the odds considerably.”

— *1997 Research Study by Brian D. Ottum & William L. Moore*

**... and that those products that are clearly defined prior to development are more successful ...**

**“Successful products have much sharper definition prior to development. Projects that have these sharper definitions:**

- Are 3.3 times as likely to be successful
- Have higher market share (by 38 share points on average)
- Are rated 7.6 out of 10 in terms of profitability (versus 3.1 out of 10 for poorly defined projects)

**The role of sharp product definition prior to commencement of a development program cannot be understated...”**

**— Robert G. Cooper  
Winning at New Products, 2001**

## ... yet “customer-driven” and “sharper definition” don’t always happen

Product developers believe since customers don’t know what they need or can’t tell you what they need, it makes no sense to waste time engaging them

Product developers assume that what their customers ask for are their requirements

- Product development process may not distinguish among:
  - What customers ask for
  - Customer requirements
  - Product requirements
  - Product specifications

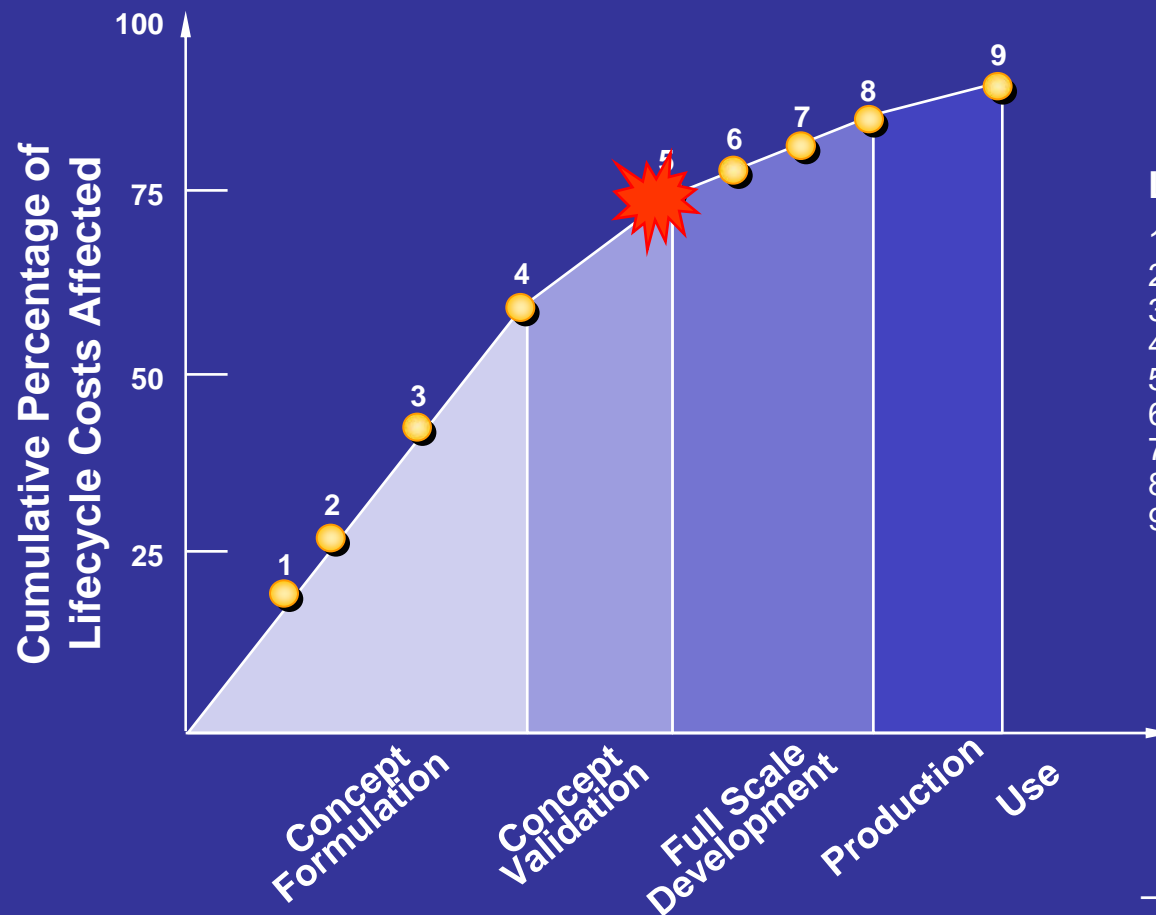
A process for gathering customer requirements is not a documented part of the product development process

- Phase reviews do not require evidence of customer requirements

# Today's focus: Getting requirements right pays off

“Pay now or pay later!”

75% of lifecycle costs are determined before development begins



## Lifecycle Phases

1. Define use patterns
2. Define alternatives
3. Develop alternatives
4. Freeze subsystems
5. Prove feasibility
6. Provide preliminary designs
7. Provide detailed drawings
8. Provide manufacturing plans
9. Product

– National Research Council

# The “Fuzzy Front End” of Product Development

Where does the input come from?



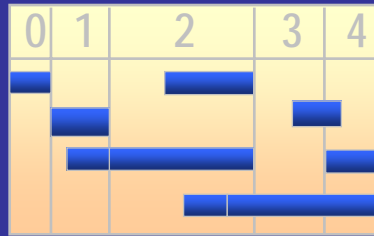
Product Development Process

“input” = customer needs and ideas

# Some typical processes for input ...



*They generate  
great ideas*



*They decide to  
develop products  
or services*



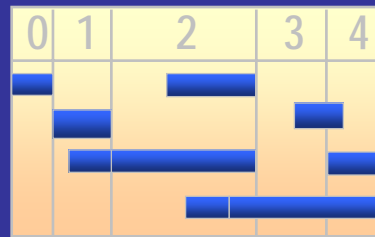
*They gain insight into  
customer requirements once  
the products are in the market*

# Some typical processes for input ...

**Product Out**



*They generate great ideas*



*They decide to develop products or services*

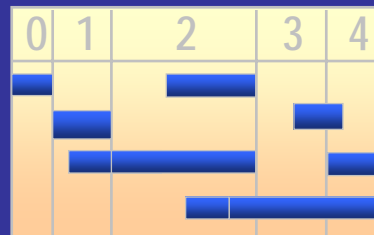


*They gain insight into customer requirements once the products are in the market*

**(One) Customer In**



*A particular customer specifies a solution*

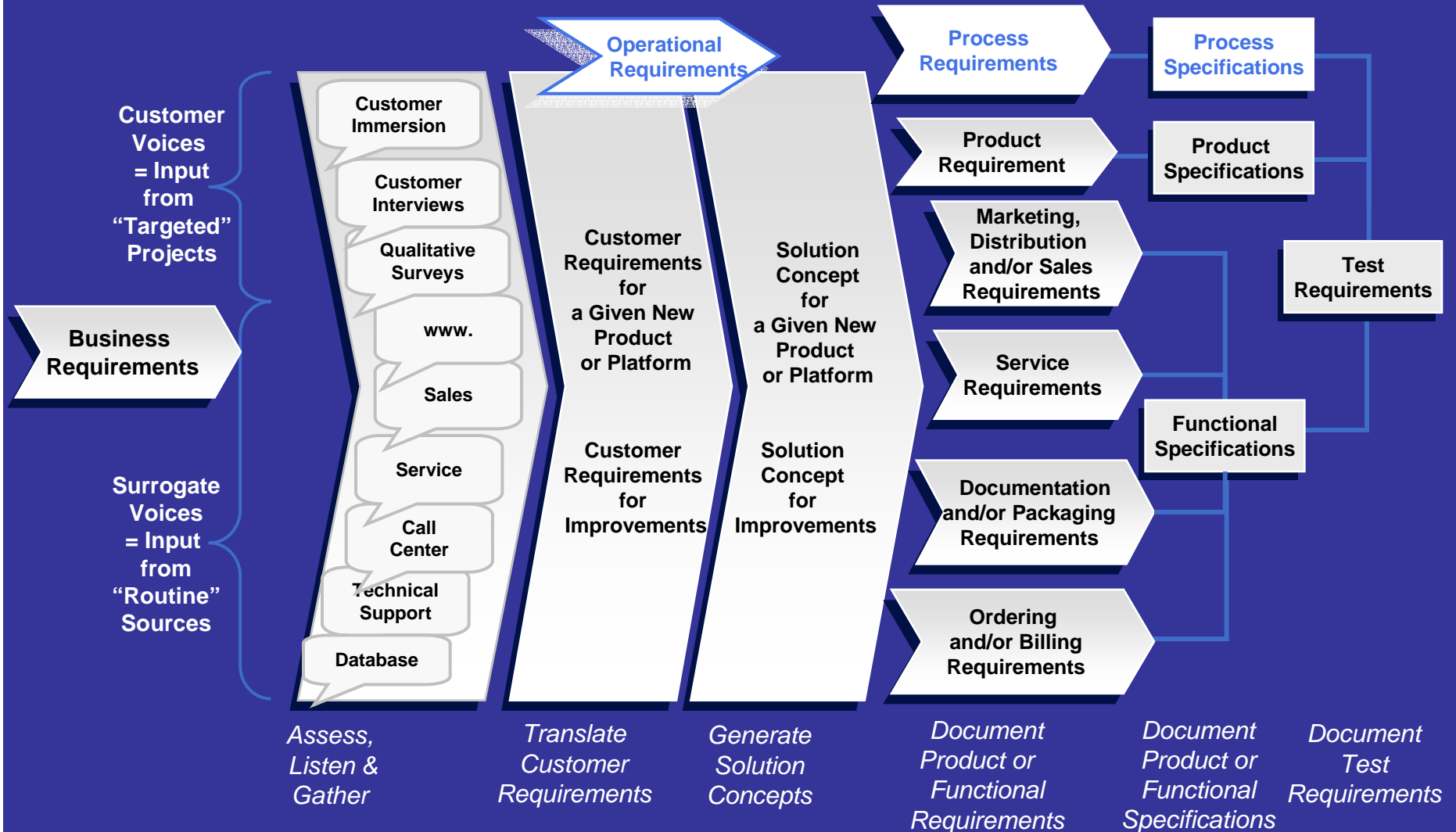


*The company develops a product or service to meet those demands*



*They see what the really great idea could have been...*

# PRTM's Requirements Development Model



# Requirements Terminology\*

## Customer or Consumer Voice:

A *verbatim* quote from a customer interaction, such as an interview, a call center complaint, a qualitative web interaction, or quote from a service call; this might be a word, a sentence fragment, a sentence, or a passage

## EXAMPLE:

“I think one of the big problems is sifting through all that data and trying to decide what’s important. Most of our medical devices today display far too much data, ... and all the numbers are the same size today without a lot of attention being paid to what’s important.”

\* Definitions & examples are from the *PDMA Toolbook #2*, Chapter 13 by Christina Hepner Brodie, “Integrating a Requirements Process into Product Development”—to be published, October, 2004

# Requirements Terminology

## Customer or Consumer Requirement:

A sentence that describes from the customer's (or consumer's) vantage point the need/issue/problem that needs to be solved or solved more effectively. Other terms with similar meaning might be "market requirement" or "customer need"

- Explicit customer requirement: A sentence that describes an evident customer need that can be readily identified within a customer voice
- Latent customer requirement: A sentence that describes an unexpressed customer need that may be intuited from a customer voice or observation, knowledge of customer experience, or a deep understanding of the context of (potential) product/service use

### **EXAMPLE: Explicit Customer Requirement**

**Physician determines readily which information is important**

# Requirements Terminology

## Product or Functional Requirement:

A sentence that describes the functionality of the solution that will solve the customer's problem. That functionality might be solved by product design or by other functional solutions like marketing programs, packaging, sales strategies, service support, documentation, *etc.*

### **EXAMPLE: Product Requirement**

**Data display uses consistent color and fonts across multiple screens to distinguish critical information**

### **EXAMPLE: Functional Requirement**

**Sales process includes demonstration of features that address quick comprehension of important data by professional staff**

# Requirements Terminology

## Product or Functional Specification:

A description of a specific technical solution and related performance targets for a given product or functional requirement

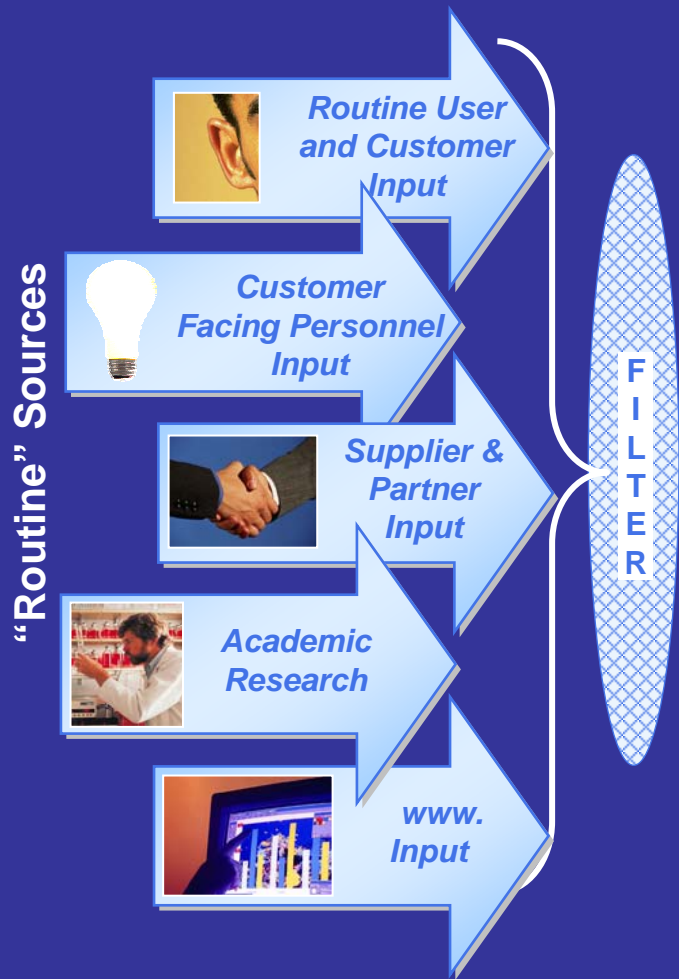
### EXAMPLE: Product Specification

- Color luminance for critical information areas is at least 50% brighter than for non-critical areas.
- Font size for critical information is at least six points larger than non-critical data.
- Critical information uses at least two indicators (e.g., color plus texture) to accommodate for color blindness.

### EXAMPLE: Functional Specification

For those requirements that market research determines are the most important to medical personnel (e.g. finding critical data readily), medical professionals in the sales process will learn of the solutions to these requirements in at least three different ways (including visual, auditory and experiential modes).

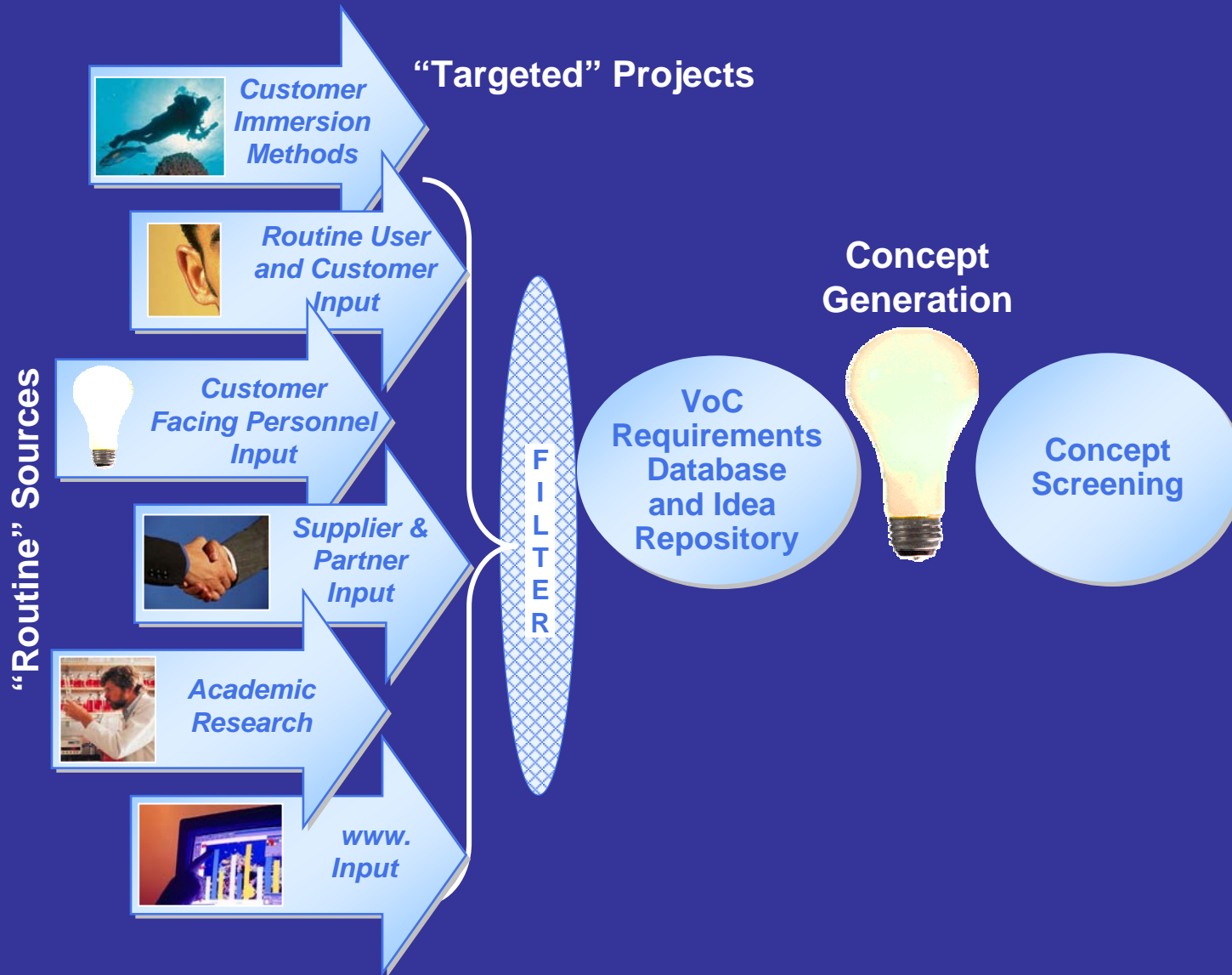
# A framework for managing your sources of input



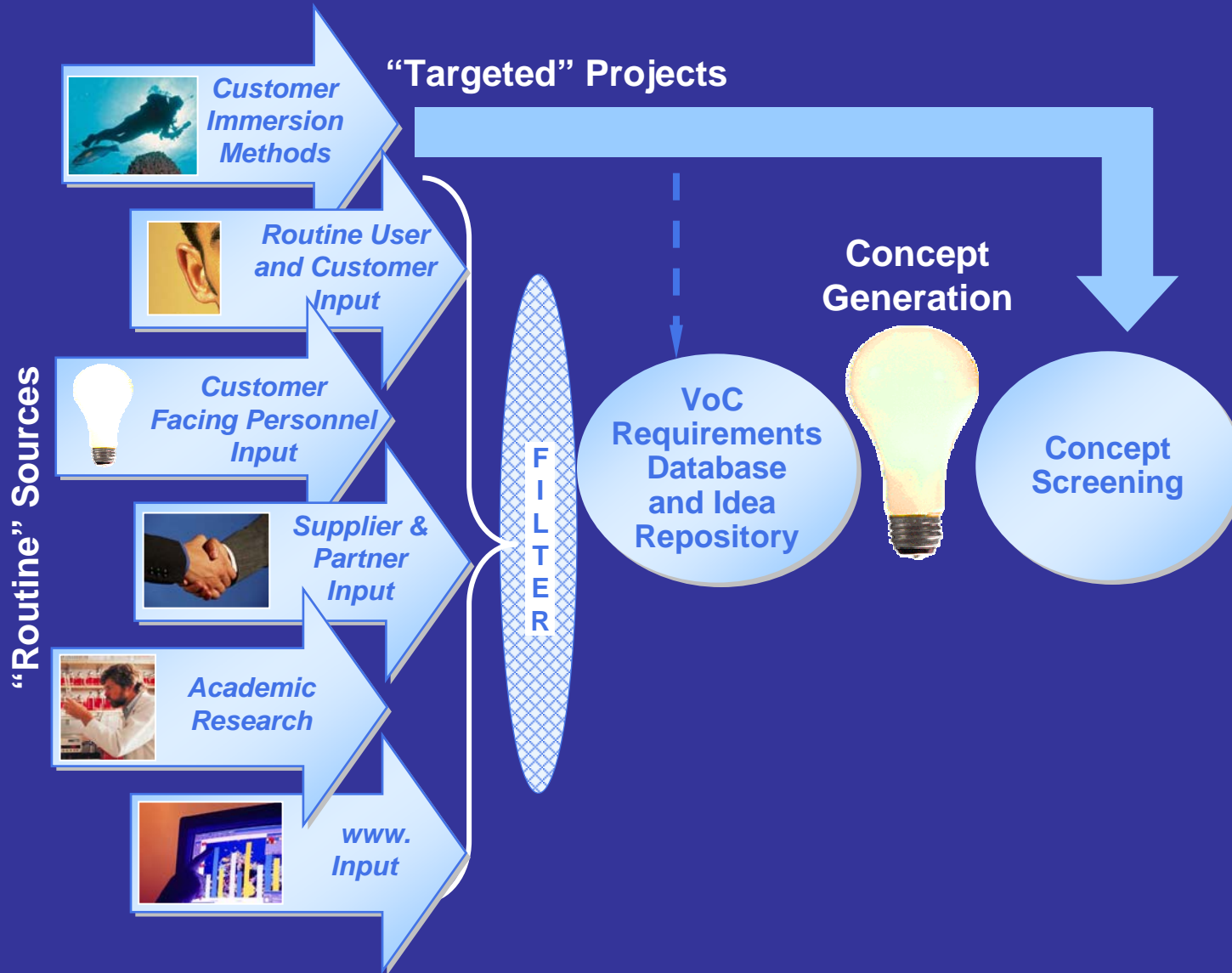
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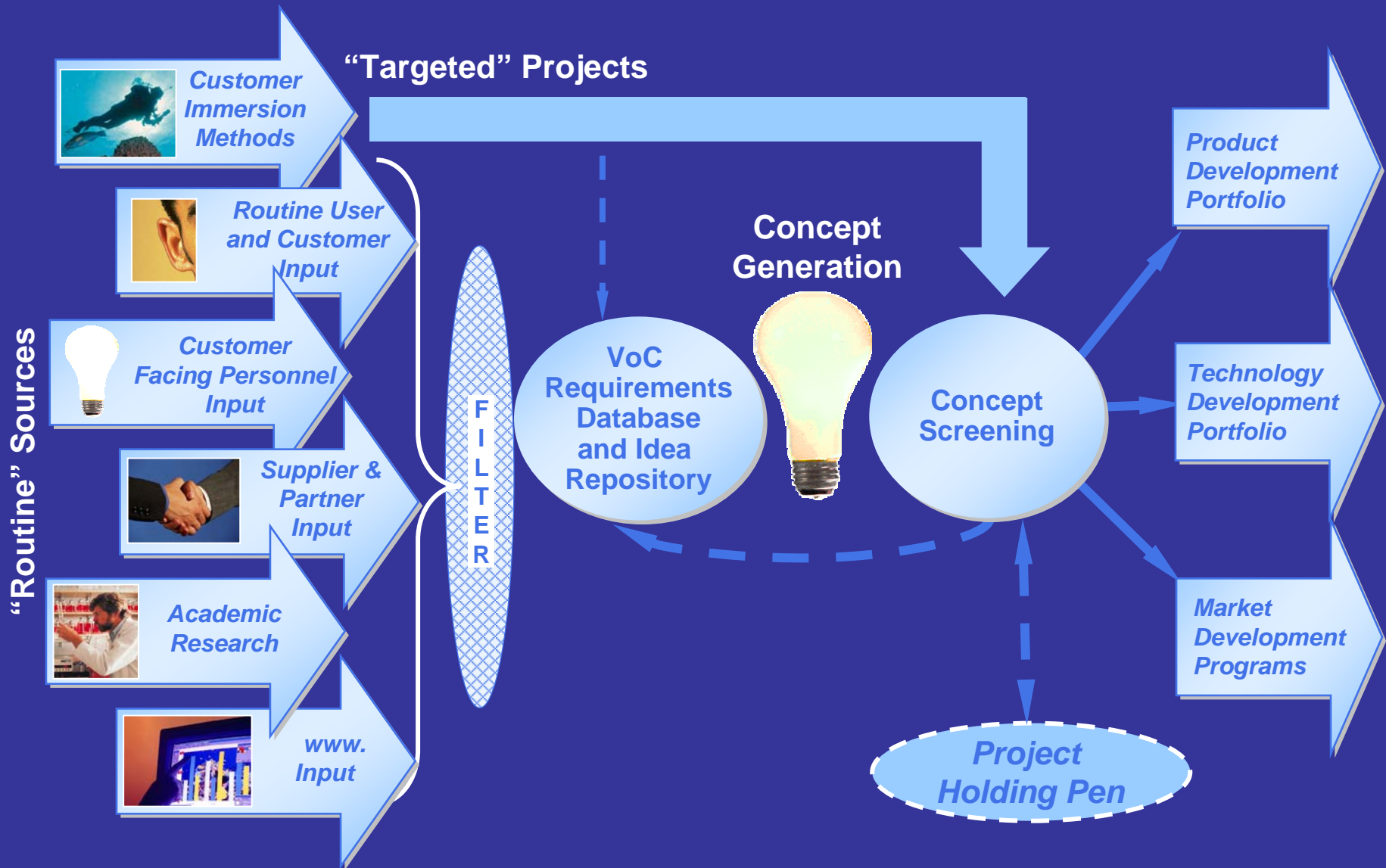
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# A framework for managing your sources of input



# The basic strategy and characteristics of the key sources are different but complementary

## *ROUTINE*

**Strategy = Breadth, Volume, and Ease of Use**

- **Breadth:** A wide diversity of avenues and individuals are involved
- **Volume:** Large numbers of needs are identified and managed—a large number of ideas are generated and managed
- **Ease of Use:** Simple templates and tools help people get input into the system and filter it for potential value

## *TARGETED*

**Strategy = Focus, Depth, and Rigor**

- **Focus:** Seeking of requirements and ideas in a specific area by a select group of people
- **Depth:** Intense dive down into the details of the specific area of interest
- **Rigor:** Use of sophisticated tools and techniques specifically designed for clearly articulating needs and generating responsive breakthrough solutions

### **Resulting characteristics:**

- Relatively low effort per input generated
- Relatively low probability of any one input enabling innovation or delivering measurable success

### **Resulting characteristics:**

- Relatively high effort per input generated
- Relatively high probability of the needs identified focusing concept development that is truly innovative and ultimately successful

# Interim Q & A

**Any questions  
so far?**

# Best practice approach to using the “Voice of the Customer” (VoC) for Customer-Inspired Innovation

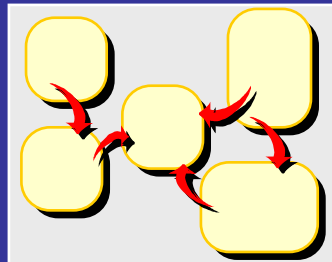


*Cross-functional  
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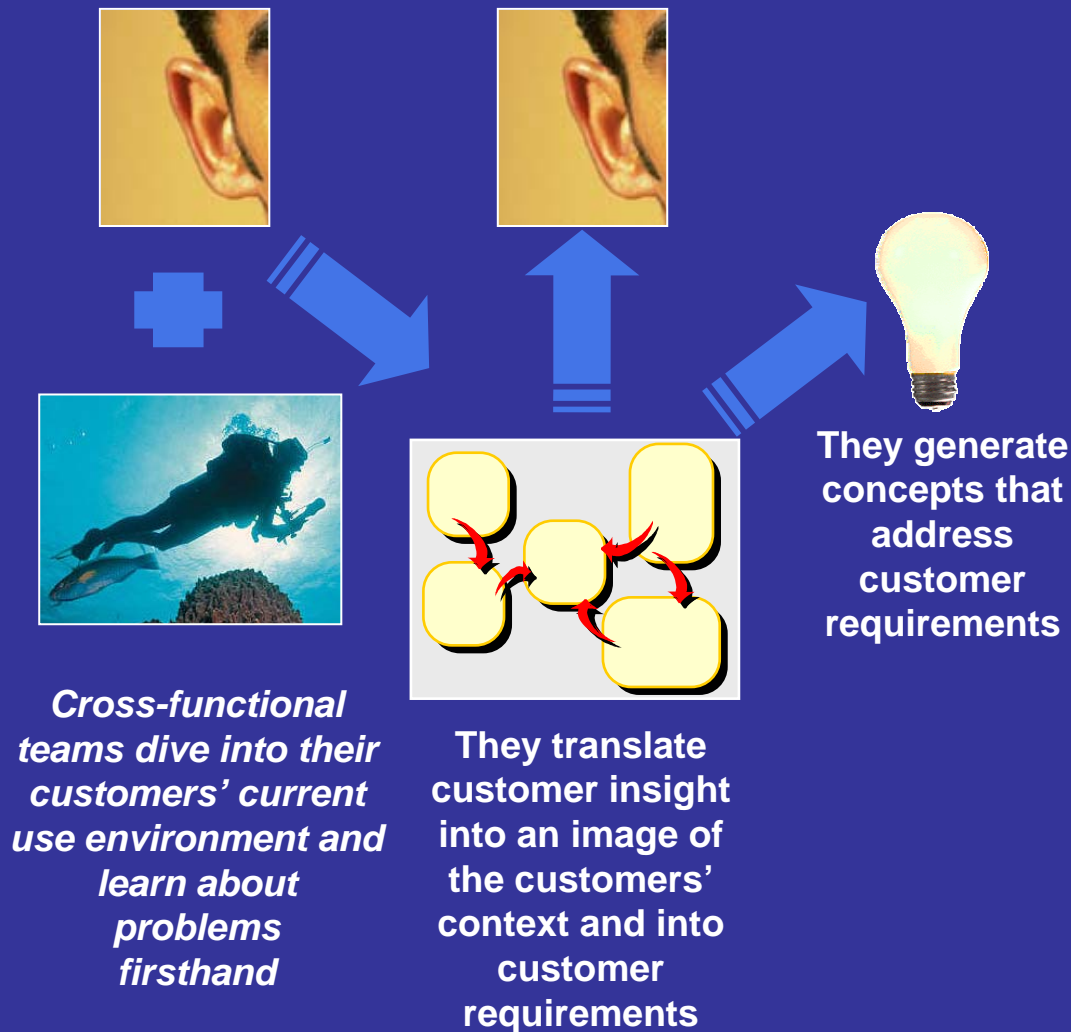


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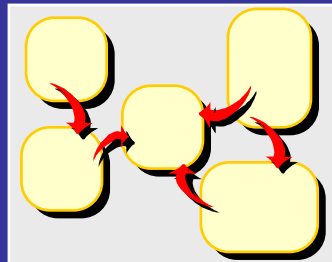


They translate customer insight into an image of the customers' context and into customer requirements

# Best practice approach to using the “Voice of the Customer” (VoC) for Customer-Inspired Innovation



# Best practice approach to using the “Voice of the Customer” (VoC) for Customer-Inspired Innovation



They generate concepts that address customer requirements



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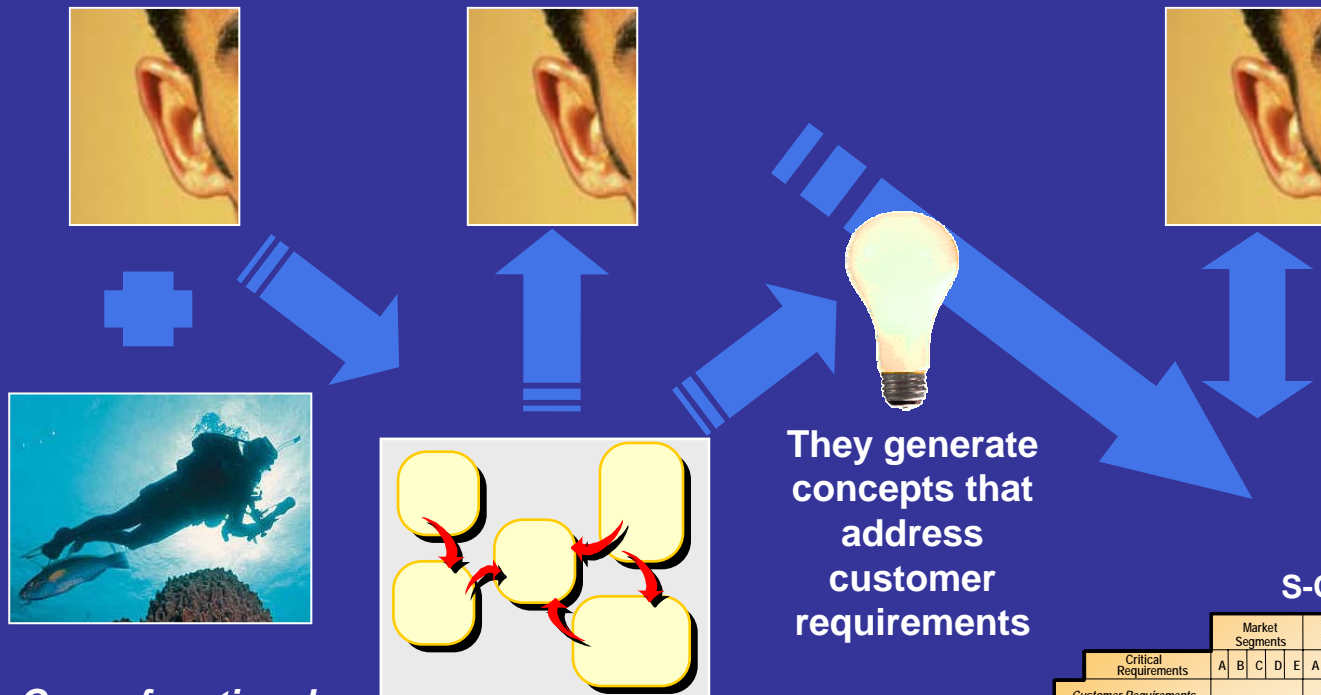
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**S-QFD**

Critical Requirements	Market Segments				Competitor				Concept Options				
	A	B	C	D	A	B	C	D	E	1	2	3	4
<b>Customer Requirements</b>	Ranking of Requirements				Score Against Requirements				Score Against Requirements				
Delighters - C1 - C2													
Differentiators - C3 - C4													
Mandatory - C5 - C6													
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- Strategic: B1 - Regulatory: B2													

They select the concepts that best meet both customer needs and company capability

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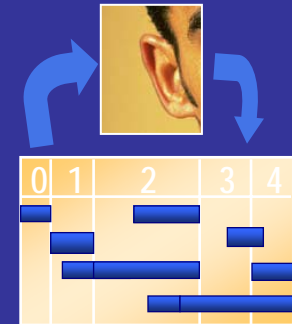
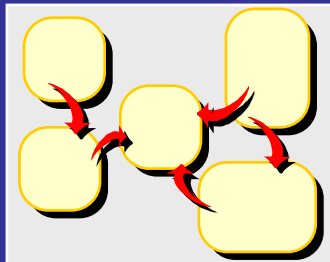
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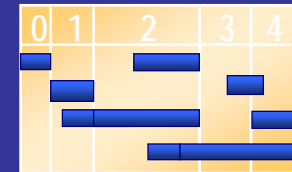
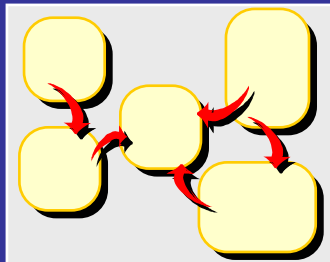
**They transform well grounded, well designed concepts into winning solutions (often in conjunction with lead customers)**

**S-QFD**

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# The key benefits of building Voice of the Customer approaches into your company's innovation process

## Voice of the Customer approaches...

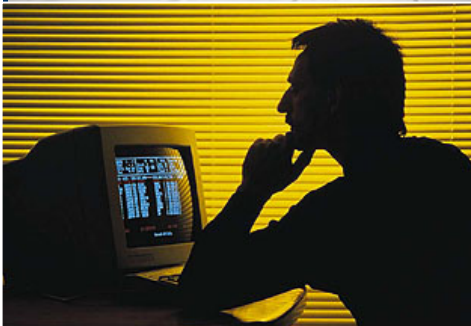
- Structure the “fuzzy front end” of discovering new markets or new market opportunities, and product or service development,
- Ground internal professionals in external realities
- Assure disciplined, focused thinking
- Tap the intuitive knowledge of experienced professionals; their experience allows them to see what market researchers cannot
- Proactively identify explicit and latent customer needs
- Facilitate a thorough exploration of potential solutions that are created in response to clearly articulated needs
- Self-document the teams' thinking and decision-making
- Align diverse individual perspectives to a common understanding

# Results of “Customer-Inspired Innovation”



## Computers and Electronics

- Latest HP AlphaServer – reduced time to market by half & expect \$3B in revenue
- Solution for “back-up/restore”



## Software Systems and Services

- Successful decision-support software for management of employee time data



## Semiconductor

- LTX System-on-a-Chip (SoC) test equipment
- Teradyne’s Spares Edge - Improved spare parts availability (50% penetration in two years)

# Results of “Customer-Inspired Innovation”



## Industrial and Heavy Equipment

- Customer requirements for power generation equipment improvements
- Solution for tank farm monitoring



## Light Industrial

- Opportunities for fuel cells
- Improved HVAC equipment for buildings



## Automotive

- SUV platform
- An innovative vehicle – soon to be announced

# Results of “Customer-Inspired Innovation”



## Consumer Goods

- LL Bean’s “Burrito Bag”
- Home theater
- Next generation tool for do-it-yourselfers



## Foods

- Family meals – concept screening projects \$400M of new revenue
- Snacks for people with specific snacking behaviors



## Sports Related

- Sports bras
- Role of skill level in perception of golf ball types and brands
- Hunting boots

# Results of “Customer-Inspired Innovation”



## Medical Equipment

- Anesthesia platform – projected to regain market share and add revenue
- Hospital beds



## Medical Solutions and Services

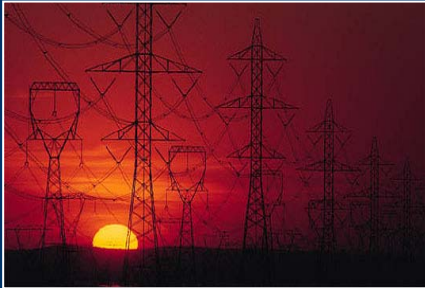
- Hospital pharmacy services
- Patient monitoring



## Medical Breakthroughs

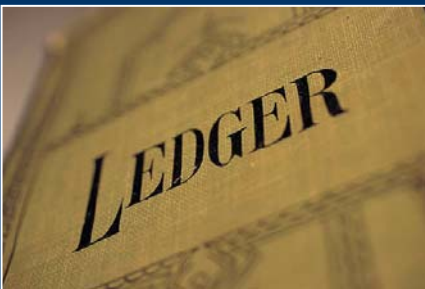
- Insight into barriers to acceptance of bio-degradable material for use in humans

# Results of “Customer-Inspired Innovation”



## Utilities

- Turning cost center into profit center by understanding customer requirements for service to critical users during blackouts



## Financial and Telecom Services

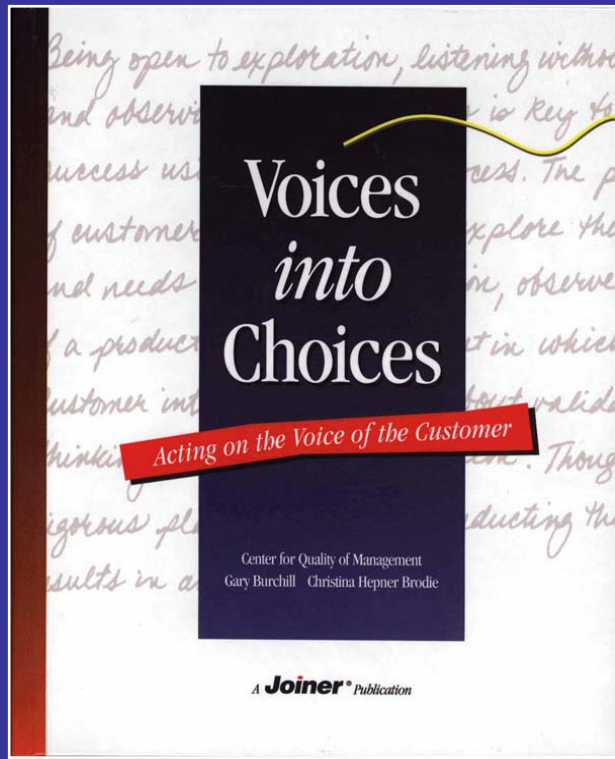
- Alternative check return solution for consumers
- New service platform for telecom



## Product Support Services

- Reducing need for direct support through software solution for remote diagnosis of instrumentation (reducing service costs)

# Resources



## ***Voices Into Choices: Acting on the Voice of the Customer***

**By Gary Burchill and  
Christina Hepner Brodie**

**1997: Oriel [Joiner]**

### ***PRTM ASSISTS WITH:***

- **Pilot VoC Projects**
- **Routine and Targeted VoC Process Implementation**
- **Diagnostics**
- **Requirements Management**
- **Innovation Management**

# Resources

*For more a more detailed discussion, examples of results in your industry or other product development information:*

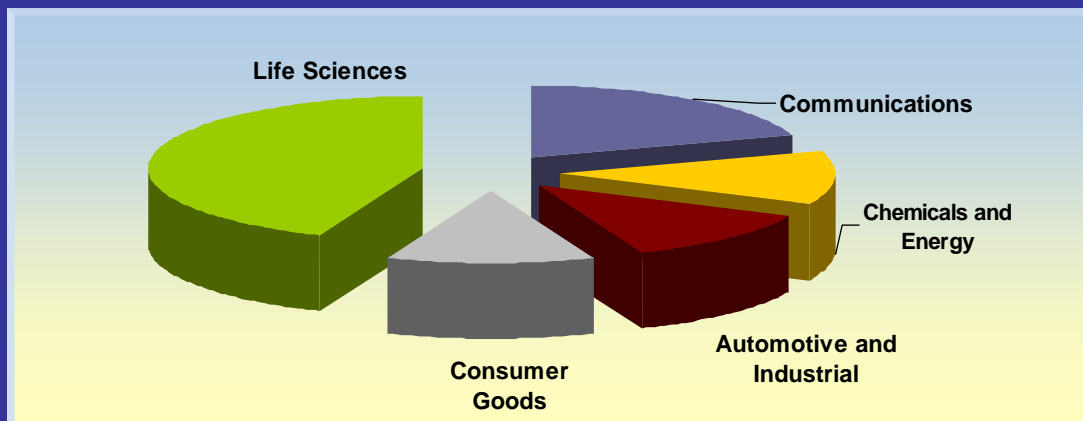
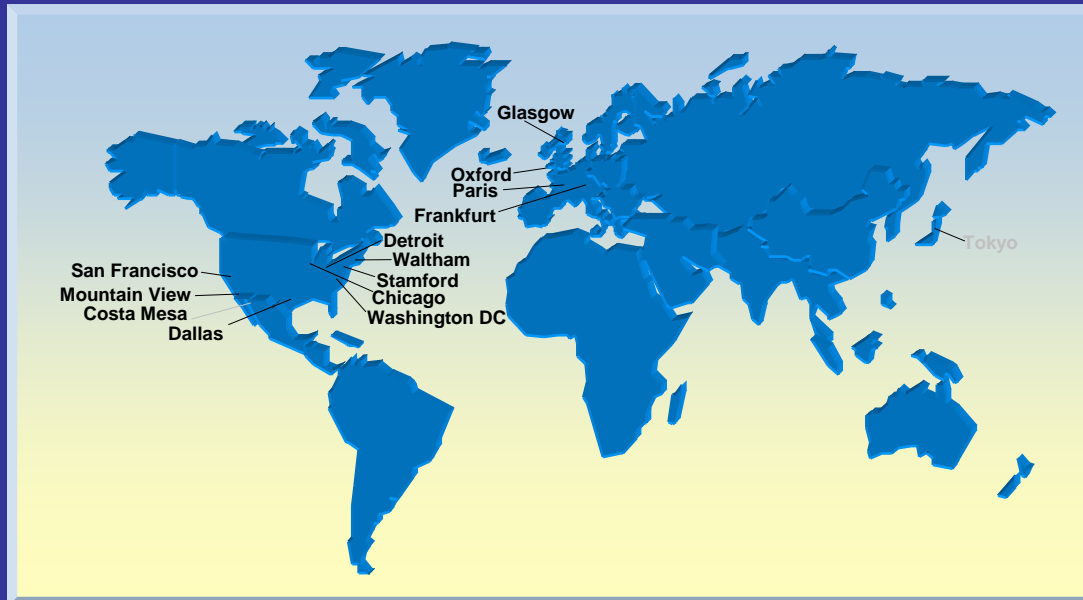
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Or [cbrodie@prtm.com](mailto:cbrodie@prtm.com)

*To participate in a VoC and Requirements Survey:*

<http://www.prtm.com/benchmarking/pace/surveys.asp>

# PRTM is recognized as the leading management consulting firm to technology-based companies



## Background

PRTM was founded in 1976 with a unique focus

- Technology-based companies
- "Results not reports"

## Experience

More than 1,200 technology-based clients

- Over 6,000 successful implementation projects
- 90% level of repeat business

## Staff

More than 450 consultants

- Technical backgrounds, MBAs from top schools, practical experience
- Senior involvement in all projects



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