

Product-MASTERS

White Paper

Customer Research Practices
for
Software Product Development:
Pros and Cons

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Customer Research Practices for Software Product Planning¹

What do you know about your customer's needs, wants and emotions that your competitors don't?

A variety of methods are available for helping software companies to develop new frames of customer understanding - to get beyond technology and features to uncover latent needs and expectations. Each of these tools have different roles and characteristics including:

- **Degree of Complexity** - Some methods, like Quality Function Deployment (QFD) are sophisticated and complex. Others, like customer enhancement request lists, are more obvious and straightforward.
- **Cost** - Some, like formal usability labs and formal focus groups, can be expensive. Others like picking up the phone to get the straight reaction from a recently defected customer may require less effort than a trip to the company espresso bar.
- **Unsolicited vs. Solicited** - Some practices, like customer satisfaction surveys, require the vendor to solicit input from the information source. Others, like support call data bases, provide input whether you want it or not.
- **Context vs. A Piece of the Puzzle** - Some practices, like customer visits by cross functional teams, can provide rich contextual input on the usage environment and buying process. Others, like "squeaky wheel" discussions with the salesperson who just lost an order, provide anecdotal and partial views of a situation.
- **Early Insight vs. Late Reaction** - Some practices, like lead user analysis are oriented to the fuzzy front end and identifying emerging needs. Others, like paper prototypes and beta tests, are oriented to reacting to alternative specific approaches to a known issue or obtaining a final grade before the decision to release the product.
- **Newness** - Some, like the Internet and World Wide Web, are new and high tech. Others like telephone or mail surveys can seem dusty rusty and less exciting- but nonetheless valuable in their place.
- **Collecting Info vs. Establishing Priorities** - Some methods like one on one customer interviews are best used to collect qualitative input and ideas. Other practices, like allowing maintenance customers an opportunity to vote a portion of the development budget and QFD are more structured and quantitative.
- **Who's Talking** - Most methods are easily capture ideas from your own customers or prospects. Others, like planned discussions with competitors customers, are oriented to delivering a new and different view on an issue.

All of these methods can be valuable members of a software company's arsenal of approaches for staying on top of the market. It depends upon how they are used.

¹ The information in this Whitepaper has been excerpted from the appendix of the now out of print report: *"Product Planning Practices in the Software Industry – 1996-97"* published by Culpepper and Associates and written by Joseph Kormos, Principal, Product-MASTERS

Twenty Customer Research Practices - The Pro's and Con's

The following is a description of the strengths and weaknesses of the twenty customer research practices covered by our survey.

Customer Enhancement Request Lists

"The Least We Can Do Is Listen"

Description	Strengths	Limitations
Maintaining a list of enhancements requested by current customers	<p>Very easy to collect</p> <p>Satisfies current customers... promotes follow-on growth and account penetration</p> <p>Lowers future sales costs</p> <p>Reduces losses due to defections; protection from competition</p>	<p>Rarely provide input on new needs</p> <p>Not oriented to penetrating new markets</p> <p>Rarely generates improvements which are sales differentiators, not delivering "board room" benefits</p> <p>Not face to face, almost completely lacking in context</p>

Service/Support Call Databases

"What's Bugging Them?"

Description	Strength	Limitations
Reviewing inbound support requests and outbound support bulletins to establish problem areas for users	<p>Reduces support costs</p> <p>Clearly improves user productivity and operational value</p>	<p>Not oriented to innovation or breakthrough opportunity</p> <p>Not oriented to penetrating new markets</p> <p>Rarely generates improvements which are sales differentiators</p> <p>Usually not face to face and often lacking in context</p>

Discussions with Salespersons Who Just Lost an Order

"The Squeaky Wheel"

Description	Strength	Limitations
"Squeaky wheel" conversation with field sales	Fresh current input on deal makers and breakers More valuable if headquarters initiates the contact	Rarely a balanced presentation of the problems. (i.e. wins come from great selling, losses from product problems Second hand input often lacking context about the complete user needs.

Formal Customer Focus Groups

"Diversity of Opinion"

Description	Strengths	Limitations
Discussions with a cross section of customers with a predetermined topic(s) , a discussion guide professional moderator and held in a special facility to tape the discussion and view participants through a one way mirror. ²	Excellent for idea generation Quick overview, common denominator, group synergy Highlights differences among customers Anonymity of Sponsorship Video record aids archiving Good food	Lack context - users don't use your product in a focus group conference room. Expensive Dependent on skill of facilitator, can be particularly difficult for high tech products Subject to dominant personality influencing direction and outcome Usually need to have consistent participants (all management, therefore no understanding of the cross section of buyer, user influencer opinions. For business to business, you get a hybrid view of many companies but may have no clear view of any one Purely qualitative doesn't yield quantitative information

² In practice many companies tend to call any quasi-organized discussion with multiple customers a focus group even though it may not take place with all the amenities described here. We suspect that companies who report use of "formal groups" are often not utilizing groups according to the above description.

One on One Structured Customer Interviews

"Understanding the Key Influencer"

Description	Strengths	Limitations
Discussions with a customers in a one on one setting. Sometimes this can be done formally with a professional interviewer and a neutral location but most often takes the place of a product manager visiting a customer or an executive meeting with a counterpart from the customer organization.	<p>Easier to clarify and understand than with a large group</p> <p>Extreme opinions which might be held back in larger groups may emerge.</p> <p>Works well for manager and executive levels</p>	<p>Often such discussions are not truly oriented to customer research but may mix selling and problem recovery into the discussion</p> <p>If not part of a planned set of such discussions the topics and agenda may vary from one to another making comparisons hard to draw</p> <p>Subject to interviewer bias</p> <p>Transmitting learning to others is often haphazard</p>

Customer Visits³

"Building the Market View One Customer at a Time"

Description	Strengths	Limitations
Visit by a cross functional team of marketing and development (and more) to a selected cross section of current or potential customers, classically from 12-30, to conduct an open ended but guided <i>listening session</i> about customers and tasks (not product). The objectives are usually to <i>explore, generate, or describe</i> . Summary of visits is oriented to big news, overall themes. Often a tour is included	<p>Decision makers and customers first hand, face to face, interactive and sustained</p> <p>Provides opportunity for observation of usage environment- interruptions, training, skills, rules, tools, schedules, commitments</p> <p>Cross Functional... provides opportunity for groups and individuals with often disparate views to learn together. Works well for studying complex technical subject matter</p> <p>Obtain maximum range and diversity of input</p> <p>Reveals a clear story about one organization⁴</p> <p>Professional moderator can be useful but not necessary</p> <p>Can be used for current customers or new markets</p>	<p>No Anonymity of Sponsorship</p> <p>Time consuming, requires travel by multiple people to customer site.</p> <p>Often unplanned, hit and miss, no clear objectives, customers selected for convenience.</p> <p>No quantitative information- not useful for developing frequency count, etc. percentage, ratios etc.</p> <p>Not for seeking <i>go/no go, forecast, selecting, measuring, evaluating</i> etc.</p>

³ Many of the descriptive points about customer visits were taken from the book "Customer Visits" by Edward McQuarrie. Sage Publications Thousand Oaks CA.

Lead User Analysis

“Solutions from the Cutting Edge”

Description	Strengths	Limitations
<p>This practice is distinguished less by the method of how information is exchanged and more with the target of participants in the exchange and what is done with the information. The practice focuses on identifying organizations which have a stronger need/higher benefit for a particular innovation and in response develop a “homemade” solution themselves. The essence of the concept:</p> <ol style="list-style-type: none"> 1. Lead users may provide a leap to the next generation 2. Those with great economic need will innovate through product change 3. Find out how they have changed the product and why 4. Determine whether their needs foreshadow the broad market 5. Adopt their solution to the problem ⁵⁶ 	<p>The types of new product innovations which a user will develop and prototype on their own has been shown to be new a functional capability.. not an extension of existing. Therefore lead users provide a window to major new solutions to unmet needs.</p> <p>Lead users have needs which foreshadow general demand</p>	<p>Tend to require a change in user practices to be implemented</p> <p>Don't provide input on improvements along established dimensions such as “faster, cheaper”</p>

⁴ This can be particularly valuable when “chasm crossing” since visionaries, the pragmatists in the mainstream market won't buy partial solutions. If your product development efforts are plagued by 80% solutions for many but whole products for none, customer visits are an excellent tool. For reference on the Chasm model see *Crossing the Chasm* by Geoffrey Moore, Harper Business.

⁶ At graphics workstation vendor Silicon Graphics the product development philosophy is to produce rather than react to chaos in the market. One of the leading practices is talking to “lighthouse customers” - SGI's version of lead users. See Steven Prokesch, *Mastering Chaos at the High Tech Frontier: An Interview with Silicon Graphic's Ed McCracken*, Harvard Business Review, November-December 1993 pg. 135-144

Structured Discussions with Competitors Customers

"A Fresh Story"

Description	Strength	Limitations
Any type of needs gathering from customers from "the dark side"	<p>Different view of the issues</p> <p>Not influenced by your usage paradigm</p> <p>Likely to be a different class of customer that you aren't used to hearing from, therefore often have different needs different value proposition</p> <p>Useful when looking to expand into a new application area, new market or assess reaction to an emerging trend</p> <p>Helps you understand why people select them not you- can be applied to product improvement or competitive selling</p>	<p>May be overly influenced by competitors usage paradigm</p> <p>Hard to arrange</p> <p>When done for overt competitive analysis purposes many loyal customers will often decline to participate.</p>

Structured Discussions at User Group Meetings

"The Heart of the Installed Base"

Description	Strength	Limitations
A bread and butter practice which incorporated all types of information gathering sessions	<p>Focuses on the people who pay the rent</p> <p>As opposed to enhancement lists, which are impersonal and lack info on context this is current, direct, face to face</p>	<p>Not documented like support calls and enhancement request lists</p> <p>Often receive input from groupies who are influenced by your paradigm. In fact they may have helped to mold that paradigm so they often can't help you break out of it.</p>

Customer Advisory Boards

“Continuity and Consistency”

Description	Strength	Limitations
<p>Long term communication relationships with a select set of strategic customers. Can take two forms.</p> <ol style="list-style-type: none"> 1. A standing management level review board which provides advice on strategies and broad direction 2. A user level customer team which collaborates extensively with developers when planning, developing and testing a new product or major new version of an existing product 	<p>Developers have direct regular contact with customers (2)</p> <p>Because of the continuity which results from regular communication, the discussion can get quickly to the heart of the issues.</p> <p>An improved ability to interpret the counsel of these customers because you know and understand them and how they approach issues</p> <p>When handled correctly a great tool for building loyalty.</p>	<p>Plans and implementations can be dominated by a few organizations. it’s a must to select board participants whose input will reflect your target market.</p> <p>May require some honoraria or remuneration for travel</p> <p>Management boards can difficult to keep active in the press of everyday activities. Need to take time to really plan each meeting or engage a facilitator to conduct and organize meetings and follow-up.</p>

Mail or Phone Surveys

“Generating Numbers”

Description ⁷	Strength	Limitations
<p>A bread and butter practice which incorporated all types of information gathering sessions</p>	<p>Fast</p> <p>Large scale</p> <p>Convenient</p> <p>Can deliver precise numerical data</p> <p>Helpful for understanding differences between groups or changes over time</p> <p>Free from interviewer bias/prejudice and the limitations of incomplete interviewing... same questions in same way for everyone</p>	<p>Not documented like support calls and enhancement request lists</p> <p>Can’t reveal what you didn’t know to ask</p> <p>Intrinsically unrewarding - results in broad, shallow data</p> <p>Difficult to deliver insight on group purchase situations as occur in most business to business markets</p>

⁷ Reference: Edward McQuarrie, the *Market Research Toolbox* Sage Publications Thousand Oaks CA. pp. 92-97

Internet/ World Wide Web

“Fast and Flexible”

Description	Strength	Limitations
Running the gamut from electronic bulletin boards to On-line surveys and collaborative moderated focus groups	<p>Fast, broad responses</p> <p>Info in digital form (surveys) aids data reduction and archiving</p> <p>Easily monitored, reviewed by cross functional personnel - marketing, development, customer support, management</p> <p>Can combine strengths of survey and interactive discussions</p>	<p>Lacks information on user’s context</p> <p>May cause high tech/high end sampling bias</p>

Paper Prototypes Presented to Customers

“Early Reactions to Solutions”

Description	Strength	Limitations
Once initial input is received a concept is presented to potential customers to obtain reaction. Concept prototypes range from presentations of feature lists to detailed renderings of user interfaces or user interaction scenarios	<p>Get feedback when change comes relatively inexpensively</p> <p>Gives customer an example to react too</p>	<p>Since it can’t be used the “drive” is a poor simulation</p> <p>By presenting a solution you limit the breadth of responses available</p> <p>Genuine useful feedback can be hard to obtain. Most participants don’t want to tell you they don’t like it</p> <p>Presenters are rarely unbiased - you <u>know</u> what they want to hear</p>

Functional Rapid Prototypes

“Oh, That’s What You Mean!”

Description	Strength	Limitations
<p>Once initial input is received a working model is presented to potential customers to obtain reaction.</p>	<p>Get feedback when change comes relatively inexpensively</p> <p>Gives customer a working example to react too . <i>"Let's see this.."</i></p> <p>may be easier (than paper prototypes which are dependent upon an explanation from a knowledgeable person) to be presented in an unbiased manner.</p>	<p>Limited in what can be covered</p> <p>Usually performance issues are not adequately represented</p> <p>By presenting a solution you limit the breadth of responses available</p> <p>Genuine useful feedback can be hard to obtain. Most participants don't want to tell you they don't like it</p>

Usability Labs

“I Can’t Believe They Can’t Find the Command”

Description	Strength	Limitations
<p>A systematic product evaluation process allowing potential users to interact with the product under controlled conditions. Used to diagnose problems with designs and to plan future interaction paradigms.</p>	<p>Focuses on high expense area of code development⁸</p> <p>Allows each study to confront the same conditions</p> <p>Easily archived</p> <p>Can be shared with many developers, used for training new developers</p>	<p>Dependent on quality of usage scenario</p> <p>Dependent upon representative sample of users. Need real customers with proficiency profile representative of target users.</p>
<p>Often undertaken in special rooms with viewing mirrors and video taping which are available in-house or via outsourcing. Analyses include recording keystroke sequences, incidences of specific usability problems, errors of omission/commission, user response times or task completion times</p>	<p>People don’t use products in focus conference rooms -so what they tell about ease of use and learnability in focus groups can be suspect</p> <p>Can clearly deliver reactions and identify usage bottlenecks - what surprised them, how did they get lost, why did they do that there.</p> <p>Can help to reduce support costs for new products, reduce learning cycles, improve productivity</p>	<p>Not representative of real world conditions/context e.g. interruptions, rules , tools schedules, commitments etc.</p> <p>Users aren’t usually buyers - may not help define key selling points</p>

⁸ According to Carlow Usability Laboratory 50% of software code is related to user interface, 30% of software development budgets are devoted to user interface, 80% of maintenance costs are related to redesign of user interfaces to better meet user requirements, 64% of software life-cycle costs are related to user interface. See www.carlow.com.

Closely Monitored Beta Tests

“The Final Check”

Description	Strength	Limitations
Soliciting feedback from hands on use prior to release of product	<p>May help to avoid catastrophe from quality/reliability standpoint</p> <p>Well managed program can provide broad input</p> <p>Can get real world reactions to new sales features</p> <p>Can provide advance testimonials for product launch</p>	<p>More a quality than a customer research function</p> <p>Can be difficult to administer</p> <p>Beta program participants often may not live up to their end of the bargain - looking for early release not product development assistance</p> <p>Review is often sporadic-hitting pet functions of reviewer not a thorough flexing of the code</p> <p>Requires developer/technical attention at crunch time</p> <p>Usually too late for input to be acted upon</p>

Customer Satisfaction Surveys

“Grading Your Paper”

Description	Strength	Limitations
Surveys, usually written, specifically oriented to understanding how a product has lived up to its expectations in the eyes of users/buyers	<p>Can tell you something is wrong.</p> <p>Sends strong quality message to organization</p> <p>Positive results can make great selling/advertising copy</p>	<p>Only valuable when there is something to compare to... last quarters results, competitors satisfaction ratings</p> <p>Not unusual to hear that top reason why customers like you is also the top reason why others don't like you.</p> <p>Need background research such as customer visits to learn what to ask</p> <p>Doesn't tell you why it's wrong or how to fix it</p> <p>Lacks information on contextual factors influencing opinions</p>

Discussions with Defected” Customers

“That Old Friend That Just Fired Us”

Description	Strength	Limitations
Planned program of discussions with the ones that got away and the near misses	Provides concrete information on a customers decision and why it was made. Nothing hypothetical here. Provides effective story telling for the rest of the organization	Can be hard to get the straight story, often sugar coated. or the differentiator is overwhelmingly placed one or two key competitor features. They want you to be around to keep the newly selected vendor honest In case of defections it’s often hard for interviewer to not take the input personally

Maintenance Customers Vote a Portion of Development Budget

“Let Them Fight It Out”

Description	Strength	Limitations
Planned program of discussions with the ones that got away and the near misses	Democratic Assures some real power for current customers	Not terribly strategic Prone to splitting the resources in a way that no individual customer has their productivity noticeably improved

Quality Function Deployment/ House of Quality

“Structure for Decision Making”

Description	Strength	Limitations
A system engineering process which transforms customer requirements into appropriate product attributes and features - favoring those design decisions which contribute the greatest value to the customer. QFD is unlike mot of the other items on this lists in that it <u>organizes</u> the input derived from various customer research methods (customer visits etc.) to define a new design. to Originally developed in Japan in shipbuilding industry. Came to US in mid 80’s for use in automotive design.	Focuses teams on the right decisions in a structured manner Vehicle for dialogue, breaks down barriers among team members among teams, forces issues/tradeoffs to be discussed early Focuses teams on the right decisions in a structured manner Ensures completeness Provides a trail of key decisions No new terms or fads- relatively easy to implement, little to lose	Strength of practices is proportional to the effectiveness of the facilitator Requires some training Can become overly complex and unwieldy, prone to excessive detail Perceived to take a long time Many feel it works better for problem solving and redesign not new concepts

Appendix A***Seven Symptoms of a Lack of Customer Understanding***

The symptoms of a lack of customer focus can be easily seen in the product, planning, positioning and communications of many companies, especially those dealing with technology driven products.

1. **Specification Creep** - The often uncontrolled decision to add widgets to an already cluttered product results from poor process and lack of confidence in the product definition.
2. **Poor Positioning Due to Poor Feature Set** - Products that sell have clear positions that communicate well from the sales force and by word of mouth. The heart of the position is an understanding of who the target is ,what problem is being solved and how our solution is better than the alternative.
3. **Unfocused marketing/selling efforts** - See 2 above.
4. **"Who did you expect to use this?"** - The sinking feeling when the beta testers respond with open ended questions about the product starts with technology in search of a problem.
5. **Numerous Late Changes** - Process, design and developer training related but the majority of changes result from new requirements.
6. **Bickering among Development and Marketing** - each group is sure they know best about the customer- if only the other would be quiet and listen. Sales watches and fumes.
7. **The Vanishing Sales Request** - Nothing worse than force feeding a product plan with "gotta have it's" to satisfy the field. Invariably the customer responds with quizzical looks (see 4 above) and the competitor has something better. The salesman? Gone to sell another "hot " product.