

The Business Case for User Oriented Product Development

This two-part series will explore the impact of incorporating users into the product design/development process. Part I makes the business case that user oriented design/development not only creates better products, but also increases revenue and cuts costs. Part II will explore the process of integrating users into each phase of the design/development process, and will offer advice and resources helpful to implementing user oriented design/development, including information about cost and budgeting.

In developing any given technology product, great care is taken to make sure the technology works correctly. Software is constantly debugged, hardware is systematically checked and everything possible is done to ensure that the product functions as designed.

Yet, in the end, an organization's bottom line success is measured not by the sophistication of its technology, but by how well it serves its customers. To be successful for any length of time, a company's offering must give its intended users enough value that they will pay for it.

It is ironic, then, that for all the elaborate systems and processes that ensure the technology works as intended, testing technology products with their intended

users is often a slap dash affair. Beyond gathering an initial requirements list, understanding the user experience—in terms of both usefulness and usability—is often an afterthought, done too late in the product cycle to be of use. In the rush to get a product out the door, there is often no time or money to spend on understanding the user's perspective.

However, statistical and anecdotal evidence is mounting that paints this strategy as penny wise and pound-foolish. Study after study shows that integrating the user experience into product development not only creates better products and more satisfied customers, but reduces the cost of development, support and maintenance. The net result is increased revenue, reduced costs and increased bottom line ROI.



Guiding the development process

"There is no direction without customer data—data about how work is structured, what matters to people, and real characterizations of market."

*Hugh Beyer & Karen Holtzblatt,
Contextual Design*

According to usability gurus Norman Nielsen Group, "The user experience encompasses all aspects of the end-user's interaction with the company, its services, and its products." Understanding the user experience—the customer data that Beyer and Holtzblatt refer to in the above quote—provides a powerful tool not only for creating more satisfying and profitable products, but also provides an essential framework for organizing a more efficient development process.

First and foremost, by understanding customer

needs and desires, project teams can focus their development efforts on product features that will deliver the most value to their customers. Without this crucial information, all the efforts and resources of the team are predicated on what often proves to be an educated guess. Armed with an understanding of the user point of view, teams can make concrete determinations about how to focus their resources—how to mate the product with the customer's work flow, which features to develop, and which issues to tackle for subsequent releases.

The net effect for development teams is that they can more efficiently develop useful and usable products for their customers. The bottom line for companies is increased revenue and reduced costs.

While integrating the user experience into product development cannot overcome a bad product or an unworkable business plan, it can



measurably add to an organization's bottom line. Yet these benefits so often go unrealized, as the up front cost of user testing is often judged to be too expensive. More often than not, however, the savings realized by cutting user testing prove to be a false economy.

Thinking strategically about cost

"Over the last two years, we have really built in the user experience point of view. Unless you do that, you're not going to hit the target.

More early and frequent user interaction translates into less business risk."

*Stephen Whalley,
Manager of Technology Initiatives
at Intel Corporation*

Cost is the most common reason given for not doing user testing. Yet, studies show that an appropriate level of investment in user testing actually helps control

costs and limit unnecessary and expensive rework. In fact, evidence shows that the earlier user testing is incorporated into development, the greater the benefit.

In his book, *Software Engineering: A Practitioner's Approach*, Robert Pressman determined that the costs of correcting problems get progressively more expensive as a product moves from definition through development to release. In fact, it can be as much as 100 times more expensive to correct a problem after a product is released than in the early stages of its development.

Pressman also found that 80% of software maintenance costs are spent on unforeseen user requirements, and only 20% are due to failures. In other words, 80% of the cost of maintenance is spent on delivering the product that users wanted in the first place.

Stage in Development Cycle	Cost of Change (in units)
Definition	1
Development	1.5 – 6
After release	60 – 100

Yet, the impact of user oriented product development is not limited to just the development process. The ability of a product to satisfy customer needs has an impact on the whole organization. Customers also interact with marketing, sales, training and support. If the product is not intuitive to use, then the company will end up with the expense of support calls. If the product does not satisfy its function for customers, it will require more resources to sell. If the product is hard to learn, training costs will rise. If the product fails to meet customer expectations initially, it necessitates expensive rework.

Clare-Marie Karat examined the impact of user oriented development in her 1990 study entitled *Cost Benefit Analysis of Usability Engineering Techniques*. In the study, she found that the benefits grew depending on how many people were affected by the improvements. She cited one case where IBM spent \$20,700 on usability work to improve the sign-on procedure in a system used by several

thousand people. The resulting productivity improvement saved the company \$41,700 the first day the system was used. In another case, on a system used by over 100,000 people, for a usability outlay of \$68,000, the same company recognized a benefit of \$6,800,000 within the first year of the system's implementation. The study found that for every dollar invested in developing more usable software, organizations derive \$10-\$100 in benefits.

Reaping the benefits

"Improving user experience can increase both revenue and customer satisfaction while lowering costs."

*Forrester, Get ROI from Design,
June, 2001*

Forrester Research published a report in June of 2001 that examined the positive impact of developing e-commerce sites around the user experience. In the report Forrester modeled a hypothetical apparel retailer e-commerce site.

The site faced issues on how to improve sales and drive revenue. 500,000 users visited the site's home page, but of those users only 3.3% would end up purchasing generating \$1,348,397 in revenue. By conducting user testing, the retailer was able to understand why users were bailing out before purchasing. The reasons ranged from no intention to buy, to confusing wording, to an ineffective search feature, to getting asked for a credit card before being shown shipping charges. Once the retailer understood the obstacles that were derailing user purchases, it could calculate how much each problem would cost to fix and prioritize which issues to tackle first.

The cost of the user testing and the highest priority fixes totaled \$490,900 and resulted in an improved purchase rate from 3.3% to 5.0%, boosting revenue from \$1,348,397 to \$2,059,014. Forrester estimated that the user testing and fixes paid for themselves in 52 days.

Separating the winners from the losers

"Companies that succeed have a deep understanding of their customers. They use that understanding to consistently develop products that deliver ongoing value."

*Marty Cagan,
Good Product Management, Inc.*

Marty Cagan's twenty-two years of experience managing products for Hewlett Packard, Netscape, AOL and E-Bay has helped him identify patterns of successful companies, and common failings of unsuccessful companies. According to Cagan, "The single biggest mistake, especially in Silicon Valley high-tech companies, is to assume that if you like your product then your customers will too. We are absolutely not our customers, and we seriously miss the mark when we believe we are." Cagan goes on to say that companies need a

constant reality check to ensure that they consistently deliver value for their customers.

A quick survey of successful companies bears witness to the notion that customer oriented companies tend to thrive. Amazon.com has relentlessly focused on the user experience, developing features such as one click purchasing and recommendation lists, and has emerged from the dot.com era wreckage as the Internet's leading retailer. Google, with its accurate search engine, spell correction, and clean interface continues to succeed, attracting an ever increasing number of fanatical "Googlers."

Established technology heavyweights have also weighed in on the benefits of understanding the user experience. IBM has developed an entire section of their website dedicated to ease of use issues, and started an ease of use email newsletter (<http://www.ibm.com/easy>). Intel, realizing that success is measured more in customer satisfaction than in megahertz, has

started spending more time understanding users in each phase of development. Says Stephen Whalley, Manager of Technology Initiatives at Intel Corporation, "We used to just set high goals from a technology point of view, but now we're setting high goals from a usability, ease-of-use and reliability point of view also."

If Silicon Valley learned one painful lesson from the dot.com collapse, it was that no matter how advanced or sophisticated the technology, no matter how far reaching the vision, the bottom line will always be that companies that do not deliver significant value to their customers will not survive.

The "deep customer understanding" that Marty Cagan refers to in the above quote is not an accident or an exercise in ESP. It is a product of systematically keeping users in the loop—from concept development through each new release. Part II of this article will take a look at how orienting product development around the user experience can be implemented in each phase of product development, from concept to release.

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