September 4, 2009

Best Practices In User Experience (UX) Design

by Mike Gualtieri

for Application Development & Program Management Professionals

September 4, 2009

Best Practices In User Experience (UX) Design
Design Compelling User Experiences To Wow Your Customers

by Mike Gualtieri
with Harley Manning, Mike Gilpin, John R. Rymer, David D'Silva, and Wallis Yu

EXECUTIVE SUMMARY

Users have great expectations when they visit your Web and mobile applications. They increasingly want an experience that's valuable, easy to use, aesthetically pleasing, and emotionally satisfying. To retain and gain customers, you have to continually win their hearts and minds by providing them with a compelling user experience (UX) that is useful, usable, and desirable. Application development professionals can take the user experience bull by the horns by following these best practices: 1) become your users; 2) design first; 3) trust no one — test; and 4) inject user experience design into your software development life cycle (SDLC).

TABLE OF CONTENTS

NOTES & RESOURCES

Forrester spoke with dozens of leading experts in design, usability, ethnographic research, design process, and software development, including both academics and practitioners. In addition, we reviewed relevant third-party research on design, usability, and ethnographic research.

Related Research Documents
"Best Practices: Attaining And Maintaining Blazing Fast Web Site Performance"
February 4, 2009

YOUR CUSTOMERS WILL RESPOND TO A FIRST-RATE USER EXPERIENCE

Improved user experience translates into three key benefits for the companies that provide it. When companies differentiate themselves from competitors by providing a better experience:[1]

- **More customers will be willing to purchase.** On average, companies that provide a superior experience have 14.4% more customers who are willing to consider them for another purchase than companies in the same industry that offer a poor customer experience.[2]

- **More customers will resist doing business with competitors.** Compared with companies that offer a poor experience, companies that offer the best experience in their industries have 15.8% fewer customers who are likely to consider doing business with a competitor.

- **More customers will recommend you**. Companies with the highest experience scores have 16.6% more customers who are likely to recommend their products or services compared with their lowest-scoring competitors.

Great Online User Experiences Are Useful, Usable, And Desirable

If your Web site is sluggish, ugly, busy, frustrating, or boring, then it's providing a poor user experience, and customers will likely go elsewhere to buy insurance, shop for couture, trade stocks, find a date, pay bills, watch videos, and do the myriad other things people do on the Web. But what is this elusive concept called *user experience?* When it comes to Web sites, many make the mistake of thinking that user experience design is just about one thing, like user interface design, or usability, or visual design, or performance. But it's about all of these elements working together (or not) to influence the user's perception of your Web site.[3] Forrester defines user experience as:
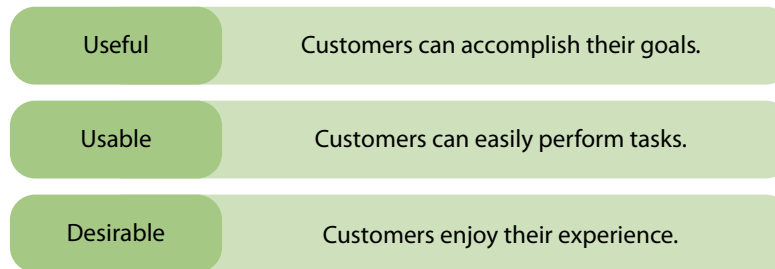
> *Users' perceptions of the usefulness, usability, and desirability of a Web application based upon the sum of all their direct and indirect interactions with it.*

Great user experiences must be (see Figure 1):

- **Useful: Can users achieve their goals?** Users visit Web sites for one purpose: to achieve their goals. The degree to which they find a Web site useful is measured by their ability to achieve those goals, which can run the gamut from routinely checking email to applying for a life insurance policy.

- **Usable: How easily can users achieve their goals?** Users want to accomplish their tasks with the least amount of effort. A Web site that provides a user with the ability to easily search for a shirt by size and color might be very useful, but if it takes many unnecessary clicks to order the shirt then the overall usability of the site is lacking.

· **Desirable: Does the site appeal to the users' emotions?** Although the degree to which the site is useful and usable can influence desirability, it's also influenced by factors such as imagery, language, aesthetics, fun, and sophisticated production values that come from attention to detail. These all add up to emotional engagement that sets brands apart from competitors.[4]

Figure 1 Great User Experiences Are Useful, Usable, And Desirable

Useful	Customers can accomplish their goals.
Usable	Customers can easily perform tasks.
Desirable	Customers enjoy their experience.

54101   Source: Forrester Research, Inc.

Leaving User Experience Design To Chance Hurts Companies

If you have ever driven in Boston, then you know that the streets are very difficult to navigate. Why? In colonial Boston someone built a house. And then someone else built a house. Then they built a path between the two houses. And so on and so forth. As a result, Boston's layout was accidental and the result is a convoluted set of streets that frustrates both residents and visitors.

Similarly, application development shops achieve poor results when they design without a plan, leaving user experience to chance. They:

· **Hurt conversion rates.** A well-designed site can have up to a 200% higher visit-to-order conversion rate than a poorly designed site. And visit-to-lead conversion rates can be more than 400% higher on sites with a superior user experience.[5]

· **Alienate customers.** Retained customers become an annuity to your business and are ambassadors of your value and brand. Well-designed sites have page abandonment rates up to 41% lower than their inferior cousins.

· **Run up development costs.** Upfront user experience design can greatly reduce the need for extensive redesign and redevelopment that may be necessary to fix a poor user experience.[6]

USER EXPERIENCE DESIGN BEST DEMONSTRATED PRACTICES

How can application developers create great user experiences that are useful, useable, and desirable? To find out, Forrester spoke with dozens of leading experts in design, usability, ethnographic research, design process, and software development, including both academics and practitioners. In addition, we reviewed relevant third-party research on design, usability, and ethnographic research. Our efforts uncovered four best practices (see Figure 2):

1. *Become your users* to know how to design for them.

2. *Design first* to avoid leaving user experience to chance.

3. *Trust no one — test* to make certain your users are happy.

4. *Inject user experience design* into your software development life-cycle (SDLC) process.

Figure 2 Best And Next Practices

Best practice	How to	Pitfalls
Become your users	• Listen to their needs. • Observe them in their natural habitat. • Create personas. • Empathize with them.	• Don't assume that developers already understand the user. • Don't just listen; observe. • Don't confuse business stakeholders with users. • Don't confuse requirements gathering with user research.
Design first	• Serve business goals by serving user goals. • Find and grow design talent. • Design for change. • Know your constraints. • Design for differences. • Borrow inspiration from other designs. • Start with low-fidelity prototypes.	• Don't forget to design for all aspects of the user experience. • Don't think tools can design for you. • Don't ignore the user research. • Don't lock into a design too soon. • Don't rush to write code.
Trust no one — test	• Settle irreconcilable differences through testing. • Take a shortcut with expert reviews. • Test continuously.	• Don't just test for usability. • Don't forget to test for reliability. • Don't forget to test for security.
Inject user experience design into your software development life cycle (SDLC)	• Educate everyone on the team about what UX is and why it is important. • Find a leader who will elevate and drive UX design. • Prioritize initial efforts on projects where you can make a big impact. • Provide incentives to application development teams. • Transform your app dev process to include UX design.	• Don't make user experience design prohibitively expensive. • Don't just throw design over the wall. • Don't fall back to old ways.
Next practices	• Use immersive development methodology. • Empower designers and even end users to help you develop.	

54101   Source: Forrester Research, Inc.

BEST PRACTICE NO. 1: BECOME YOUR USERS

The first step in designing a great user experience is to deeply understand your users — their needs, wants, hopes, dreams, aspirations, attitudes, and goals relative to the project at hand. Many application development professionals make the mistake of thinking that understanding the user is just about requirements gathering or observing user reactions to a demo. But to get inside their heads and find out what your users will really find useful, usable, and desirable, you should:

- **Listen to their needs.** Remember that your *users* are the real people who will use your Web site, not business stakeholders. Interviewing them directly is the best way of understanding their needs. You can also survey them, collect their feedback on your Web site, and review what they're saying about you and your competitors in the blogosphere and on social networking sites. When you do use traditional requirements gathering processes, remember to ask not only for what they'll find useful but also about the features and design conventions they find usable and desirable.

- **Observe them in their natural habitat.** Users cannot always articulate what they need and what will make them happy. Observing how users perform tasks on your existing Web site or the sites of competitors is invaluable for understanding issues that users were unable to articulate. When doing this, you should also observe the environment and context in which the user performs the tasks. That's because your user experience design must fit into the total context in which the user is using your application.

- **Create personas.** A persona is a vivid, narrative description of a fictitious person who represents a segment of your user population.[7] It is based on primary research that uncovers the real attitudes, goals, and behaviors of the users it represents. To turn research into a persona, give the persona a real sounding name and a face (a stock photo will do), and write a description of him or her that includes details you uncovered during your user research.[8] Some companies go as far as creating posters or even life-size cardboard figures of their personas. Keep in mind that it is common to have more than one persona, each representing a segment of your user population.

- **Empathize with them.** You have listened and observed. Now you can take a walk in their shoes — to feel their pain and their joy — to truly understand them.[9] What upsets them? How do they make decisions? Empathize broadly, but also empathize in context. The concerns of a nuclear reactor operator will be different from a 15-year-old music lover. To empathize with your users, pick a persona to impersonate and get into character. Do a mental walkthrough of the user waking up in the morning, going through her day, and, at some point, using your application. What motivated her to use the applications? What was she thinking? What tasks did she want to perform, and how easy was it to do them? What other choices does she have for achieving her goals, and why did she choose your application?

Pitfalls To Avoid In Becoming Your Users

If you get the user research wrong, you are not going to get your user experience design right. To get the user research right:

- **Don't assume that developers already understand the user.** In the absence of real information about users, developers will engage their wonderful imaginations to create a mental model of who they think the user could be. Then they'll design a site that serves the needs of their imaginary friend, but not necessarily the needs of the real-life end user. It is not the developers' fault: Without a disciplined approach to user research and design, they're left with little alternative.

- **Don't just listen; observe.** Henry Ford famously said "If I had asked people what they wanted, they would have said 'faster horses.'" Listening is only one way to understand your customers. Remember that it is just as important to observe them and empathize with them. That will allow you to understand their overarching goals and think more creatively about how to help them achieve those goals.

- **Don't confuse business stakeholders with users.** Business stakeholders are important when it comes to defining the business goals, but user experience design is about the actual users of your site. In fact, business stakeholders often have goals that are in opposition to your users. For example, a business stakeholder might want to add features that they like but users don't need or force registration when users just want to make a purchase and get on with their lives.[10]

- **Don't confuse requirements gathering with user research.** A typical application development process starts with requirements gathering and then proceeds to design and development. But often the requirements gathering focuses only on the needs of the business and not the needs of the users. Make sure that your business analysts understand the difference between traditional business requirements and user research.

BEST PRACTICE NO. 2: DESIGN FIRST

Firms should not leave user experience to chance. Instead, they should design the user experience and then build a Web site or application that delivers that experience. Design is part art because you have to find that differentiating je ne sais quoi that attracts customers.[11] But design is also part science because there is research on what has worked — or failed — in the past. To design a user experience that is useful, usable, and desirable:

- **Serve business goals by serving user goals.** The user experience provided by your Web site exists in the broader context of your business needs. Well-designed sites help users do something that furthers the goals of the organization. For example, http://stargate.mgm.com serves fans of the *Stargate* series of science fiction television shows by letting them explore the new spaceship in the show. It also serves the business goal of showing potential advertisers Web

site usage data proving that fans are highly committed, which means that ads on the show will be worth more.[12]

- **Find and grow design talent.** Great design requires creative talent that is inspired by a deep understanding of the user, a deep understanding of the business goals, and a deep understanding of all that is possible with technology. That takes either a team of individuals with complementary skills — like visual design, interaction design, and copywriting — or an interactive agency or design firm that can supply a team.[13] Recruiting a team won't be easy because agencies compete intensely for the top talent. One option is to recruit employees with agency experience with the lure of more regular hours and less travel than agencies can typically offer. Another option is to train internal staff with the right potential by sending them to workshops or courses on user experience design.[14]

- **Design for change.** Users' expectations of what is useful, usable, and desirable can change depending upon a number of factors, including cultural shifts, economic realities, competitive offers, and technology. Application developers should therefore design for change by getting insight into how your personas will evolve in the future. Do this by coming up with a couple of future scenarios based upon trends that are in context such as competitors' announced intentions, technology adoption cycles, cultural shifts, and economic cycles. Then brainstorm about how each of your personas will react to each of these future states. Now evaluate how well your current user experience design can evolve to each of these future visions. When you do this, be sure to evaluate the ability of your technical architecture to evolve as well.

- **Know your constraints.** Make sure that your designers know their constraints before beginning the design process. Like everyone else, designers are constrained by time and money — but those are not their only constraints. They may also be constrained by the need to fit their work into an existing site that has consistent internal conventions for elements like menu placement and link format. Or, you might have technical constraints like the screen size for a mobile application or an underlying technical architecture that prevents you from supporting certain features cost-effectively or performing adequately.[15] For example, providing your customers with a single view of all their accounts might sound simple but could require a million-dollar integration project on the backend system.

- **Design for differences.** It is likely that your user research uncovered the need to design for more than one persona. That doesn't mean that each of the user segments these personas represent are equally important to your business. For example, you may want to put more design effort on satisfying users that are the most profitable or users that have the most potential for increasing revenue. Or you may want to focus on attracting a new set of prospective users to your site. Once you've assigned a relative importance to each persona, you can use a tool like the persona-based prioritization matrix developed by Microsoft to determine the most important content, features, and functions to include in your site.[16]

- **Borrow inspiration from other designs.** Design almost never starts from scratch. Most firms periodically review competitors' sites to see what they're doing. More forward-thinking companies also look outside their industry to find design ideas that will differentiate them among best-of-breed sites like nytimes.com in media, amazon.com in shopping, netflix.com in entertainment, and fidelity.com in financial services. New design ideas can also be inspired by new technology. For example, application developers can see designs based on innovative uses of Flash at the Fidelity Labs site and an innovative interactive transcript feature used with videos at ted.com.

- **Start with low-fidelity prototypes.** Starting with paper prototypes to communicate and test design ideas reduces cost and encourages exploration of a broader range of design options.[17] In contrast, starting out by creating slick, detailed designs in Adobe Photoshop or a Web design tool lengthens the early stages of the design process and tends to lock in the first design that's considered — which probably isn't the best alternative out of all those available. Additionally, early stage designs that look like a finished product can distract the user from what is really important during early usability tests by focusing their attention on colors or fonts. In addition to paper prototypes, designers should also consider creating wireframes using Microsoft Visio. The wireframes offer some interactivity, don't look like a finished product, and are fast and inexpensive to modify. Once your confidence in the design increases, you can start to increase the resolution of the design.

Pitfalls To Avoid In Designing First

When designing first:

- **Don't forget to design for all aspects of the user experience.** Remember that UX design requires visual design, interaction design, and then usability testing to validate the design. To create a user experience that is useful, usable, and desirable, you'll need individuals with all these skill sets on the development team.

- **Don't think tools can design for you.** Tools can be useful in designing, testing, and developing applications. But giving a business analyst Visio, Photoshop, Adobe Dreamweaver or an assortment of portal templates won't necessarily result in a great user experience any more than giving a budding writer Microsoft Word will automatically result in the next great American novel. To use these tools effectively, your design and development team will need relevant training and guidance.

- **Don't ignore the user research.** Amazingly, many companies commission user research only to ignore it during the design phase. This can happen when the research is commissioned by the marketing department, but then ignored by product development. But it can also happen simply because designers feel threatened by the constraints user research puts on their creativity.

For example, one software company created personas only to have the team responsible for redesigning their site stick them in a drawer and ignore them. The resulting design was a failure that drew huge criticism from the company's customers.

- **Don't lock into a design too soon.** Do not commit too quickly to a particular idea. A design team that doesn't generate at least three viable alternatives at the start of the process isn't doing its job. Before you pick one of the options, subject it to some user feedback via low-fidelity prototypes, and review it for fit against business objectives. It's natural to lean toward one of your options, but be prepared to abandon it swiftly if it does not pass user and business case review.

- **Don't rush to write code.** Resist the urge to start coding before you have a solid design. Keep in mind the advice of Bill Buxton, author of "Sketching User Experiences," who said, ". . . the last thing that you should do when beginning to design an interactive system is write code."[18]

BEST PRACTICE NO. 3: TRUST NO ONE — TEST

Despite your best disciplined efforts, there's no guarantee that you'll design a great user experience. Waiting until you launch your site to see how users will react is risky. That's why companies should employ testing early and often to validate their user research and designs.

- **Settle irreconcilable differences through testing.** Design teams often disagree. Instead of engaging in incessant arguments about what is or is not user friendly, test your designs with actual users to settle design differences. Usability testing is where representative users attempt to complete specific tasks under the watchful eye of a moderator — one user at a time. Effective usability testing can be done quickly and inexpensively; software such as TechSmith's Morae will record the user session, and you can share the results with your design and development team.[19] Analyze the results to determine whether or not the users completed specific goals, how quickly they completed the goals, and how many errors they made along the way. Afterward, ask them questions designed to determine how well they enjoyed the process such as, "What did you like about the site?" and "Was there anything that frustrated you?"

- **Take a shortcut with expert reviews.** Usability lab tests find many of the same mistakes over and over again. As a result, there is already an enormous body of knowledge about what works and what doesn't work in many different application contexts.[20] Application developers can tap into this knowledge with heuristics testing, also known as an expert review. The review process begins by identifying the target users and their goals on a particular site. Armed with this information, a trained reviewer emulates the user and tries to accomplish specific goals on the site while looking for well-known user experience problems.[21]

- **Test continuously.** Testing should not stop after the application is deployed. Sites change over time as a result of updates. The needs and expectations of users change over time as

well, causing the performance of older designs to degrade even if the site or application hasn't changed at all. Companies can use a variety of low-cost testing techniques to continuously monitor site health and alert them to the need for design tweaks or upgrades.[22]

Pitfalls To Avoid In Testing

Not all user-centered testing is equally effective:

- **Don't just test for usability.** Usability is only one aspect of user experience. Testers must also make sure that the site does something that users want to do. To test for usefulness, let users co-design their tasks by supplying specific details of a goal they want to accomplish. For example, instead of asking them to buy a PC, ask them to buy the specific PC they'd like to own, like a laptop that weighs less than 3 pounds, has a battery life greater than 4 hours, and costs less than $500. Observe whether the site has the content and function to support their real world objectives.

- **Don't forget to test for reliability and security.** Testers must also make sure that the site and particular applications within the site perform their functions correctly and securely. Otherwise, users can find them selves cut off from the site's value. When testing for reliability, be sure to force errors by doing things that the site is not designed to support, like entering nonsense into an email address field — the site's reaction will often surprise you. Testing for security is not just about user authentication and authorization; it is also about confidentiality, integrity, availability, and non-repudiation. To avoid becoming a feature story on the front page of *The Wall Street Journal*, be sure to engage security and risk professionals to perform threat modeling on your user experience and technical design.[23]

BEST PRACTICE NO. 4: INJECT USER EXPERIENCE DESIGN INTO YOUR SDLC

The trick is to actually get your application development professionals to elevate user experience design to become a first-class part of their job. To do this:

- **Educate everyone on the team about what user experience is and why it is important.** It is not that application development professionals don't want to create great user experiences. It's that, for the most part, no one ever taught them how. Get the word out that user experience design is important by communicating its business benefits. One way to do this is by circulating success stories that describe what various companies did to improve user experience and what results they saw. Free online newsletters from companies like User Interface Engineering and Human Factors International are great sources for these examples, as are Forrester reports. You'll know that you're making progress when you say "user experience" and the team says "useful, usable, and desirable."

- **Find a leader who will elevate and drive UX design.** Firms that take user experience seriously have executive sponsors and often an internal evangelist. Find someone in your app dev

organization that will become the internal evangelist for user experience — someone who will help elevate user experience design as a discipline and drive the best practices.

- **Prioritize initial efforts on projects where you can make a big impact.** Your ultimate goal should be to instill user experience throughout your app dev organization. But if your app dev shop's awareness of UX is close to zero, then it is not practical to think that you can inject UX best practices across the board overnight. That means it's important to start by prioritizing projects where user experience improvements will have the greatest impact, creating proof that this approach works. For example, a large insurer applies user experience design to those projects that are either customer-facing or that are used by employees but will have a direct impact on customers.

- **Provide incentives to application development teams.** Application development leaders often give teams incentives only to deliver functionality and not a great user experience. Refocus your application development team not just to create software that works but instead to create user experiences that are useful, usable, and desirable. One way to do this: Tie performance ratings or even bonus payouts to a rise in metrics like customer satisfaction with a site or application. Alternatively, you can tie compensation to a decline in the number of errors found through usability lab testing or standardized expert reviews.

- **Transform your application development process to include UX design.** A common gripe of user experience professionals is that app dev doesn't understand the importance of user experience design. But often the real barrier is the cost of bringing in outside user experience professionals. Therefore your ultimate goal should be to turn application development into user experience development by making user experience part of your app dev DNA.

Pitfalls To Avoid In Injecting User Experience Design Into Your SDLC

To keep your UX design train rolling, avoid these pitfalls:

- **Don't make user experience design prohibitively expensive.** If user experience design adds costs or time to application development projects, then it might be abandoned. Fortunately, integrating UX design does not have to be expensive. Many of the best practices are changes in attitude and activities on the part of the team, which can actually *shorten* the time needed for completing the project by reducing rework caused by users rejecting the site after it's launched. If you do have to bring in outside designers or if the process does add cost, you can justify it by showing added value. To do this, identify the key metrics that will improve from your UX efforts and build a simple return on investment (ROI) model that shows these improvements justify the cost.[24]

- **Don't just throw designs over the wall.** Designers that are separate from developers often hand off designs to app dev and never see them again. Both designers and developers lose when that happens because designers don't learn about what works for the developers and what

doesn't, and developers get cut off from a resource that could help them find solutions when they run into problems. Ideally, your app dev group and designers should be located together to encourage collaboration and skills transfer to each other.

- **Don't fall back to old ways.** Most application development shops have been focused on improving processes for building, rather than for designing applications. Incorporating UX design best practices will be a change in mindset that needs to become permanent. To help reinforce the change, get in the habit of asking whether the design is useful, usable, and desirable for intended users at every review session.

FORRESTER'S USER EXPERIENCE DESIGN NEXT PRACTICES

While our research uncovered a number of user experience design best practices, here are some next practices that application development professionals should focus on once they've mastered the basics:

- **Use *immersive* development methodology.** Just as application development professionals are experts in programming languages, databases, frameworks, and platforms — they also must be expert in user experience design. Immersive development methodology is a new development methodology needed to marry application development with user experience design.[25] Immersive development puts talented application development and user experience professionals at the center of the project and surrounds them with a supporting cast of project managers, business analysts, and support developers. This methodology rejects the notion that application development is like running an automotive factory or building a shopping mall. Rather it approaches application development as a creative process that is more akin to making a movie.

- **Empower designers and even end users to help you develop.** The ranks of businesspeople who are capable of developing applications are swelling due to a combination of the technology-savvy Millennial generation entering the workforce, the proliferation of easy-to-use development tools, and burgeoning demand for applications. Microsoft is offering a new design tool called SketchFlow that allows designers to create wireframes and low-fidelity prototypes and then progress to higher resolution prototypes all the way through to development. Adobe plans to offer a similar tool called Catalyst.[26] In addition to tools, you must also provide end user developers with some processing scaffolding so that they can effectively collaborate with professional developers.[27]

IDENTIFYING YOUR CHALLENGES

Where should you start? We have created a diagnostic tool you can use to assess your current capabilities — and opportunities for improvement — and see how you stack up against your peers (see Figure 3). Scores will be calculated automatically for online readers. All scores are anonymous.

Figure 3 User Experience Design Self-Diagnostic Tool

Part 1: Become your users

	Yes	No
Are you asking and listening to the needs of your users? (Remember, business stakeholders are not necessarily your users.)		
Are you observing how your users perform tasks on your existing Web site or your competitors' Web sites?		
Are you creating user personas?		
Are you empathizing with your users?		
Total		

Part 2: Design first

	Yes	No
Is your user experience design serving both the user and your business goals?		
Do you have design talent that has a deep understanding of the user, the business goals, and all that is possible with technology?		
Are you designing for change?		
Is your design team aware of all the business, technical, and legacy design constraints?		
Are you designing for all of the personas that matter?		
Does your team stay abreast of design trends of competitor sites and sites in other industries?		
Are you using low-fidelity prototypes to rapidly iterate your design ideas?		
Total		

Part 3: Trust no one — test

	Yes	No
Do you settle irreconcilable design differences through user testing?		
Do you employ heuristic testing to expedite testing?		
Do you periodically test your designs, even after they are deployed?		
Total		

Part 4: Inject UX design into your software development life cycle (SDLC)

	Yes	No
Does everyone on your team understand what UX is and why it is important?		
Do you have a leader who can drive UX design?		
Are you prioritizing projects where UX improvements will have the largest impact?		
Are your application development teams encouraged to develop great user experiences?		
Are you transforming your application development process to include UX design?		
Total		

54101   Source: Forrester Research, Inc.

SUPPLEMENTAL MATERIAL

Online Resource

The online version of Figure 3 is an interactive self-diagnostic tool that helps clients assess how their current practices stack up against those of their peers.

Companies And Experts Interviewed For This Document

In addition to the experts listed below we also spoke with dozens of application development professionals and technology vendors.

Aaron Marcus, founder, Aaron Marcus and Associates

Anthony Franco, president, and Peyton Lindley, executive director of UX design and technology, EffectiveUI

Bill Buxton, Microsoft Research

Carolyn Snyder, Snyder Consulting

Chris Blatnick, technologist in collaboration, user interface and productivity, Interface Matters

Christer Garbis, senior user experience researcher, Microsoft

Dave Wolf, vice president, Cynergy Systems

Deborah J. Mayhew, Deborah J. Mayhew & Associates

Janice Nall, director, division of eHealth marketing, Center for Disease Control and Prevention

Janice Redish, Redish & Associates

Jared M. Spool, CEO, User Interface Engineering

Joshua Barr, user experience architect, Allstate Insurance

Karen Holtzblatt, founder and CEO, InContext Enterprises

Kay Corry Aubrey, Usability Resources

Louis Rosenfeld, Rosenfeld Media

Nancy Mann, consultant, User Experience Design & Research

Panu Korhonen, chief UI designer, Nokia

Rolf Molich, DialogDesign

Sarah Bloomer, Sarah Bloomer & Co.

Sarah Kuhn, department of regional economic and social development, University of Massachusetts Lowell

Shafath Syed, group product marketing manager, Adobe

Susan Dray, Ph.D., president, and David Siegel, Ph.D., vice president, Dray & Associates

Tobias Komishke, Ph.D., and Joel Eden, Infragistics

Whitney Quesenbery, Whitney Interactive Design

William Albert, director of the design and usability center, Bentley University

ENDNOTES

1 Firms need to dramatically raise the bar on the customer experience they provide. How? By adopting what Forrester calls Experience-Based Differentiation (EBD). This enterprisewide effort focuses on three principles: obsess about customer needs; reinforce brands with every interaction; and treat customer experience as a competence, not a function. See the January 2, 2007, "Experience-Based Differentiation" report.

2 Forrester found that customer experience leaders have an advantage of more than 14% over customer experience laggards across all three areas of loyalty — willingness to buy more, reluctance to switch, and likelihood to recommend. See the June 22, 2009, "Customer Experience Boosts Revenue" report.

3 Jesse James Garret provides a chart that shows the elements of user experience. Source: Jesse James Garret, "The Elements Of User Experience" (http://www.jjg.net/elements/pdf/elements.pdf).

4 To gain greater insight into the factors that influence desirability, we spoke with design leaders and scoured the Web for desirable experiences. Through our research, we found many sites that were pure fun and numerous others that simply piqued our curiosity or provided a warm sense of satisfaction. Our conclusion? Desirability doesn't require an extreme, positive response — it can be more subtle. See the August 8, 2007, "Desirable Online Experiences: Taking The Web Beyond Useful And Usable" report.

5 To help customer experience professionals estimate how far their Web site metrics are likely to move as a result of improvements in the customer experience, we aggregated data on the impact of more than 80 site improvement projects. See the October 10, 2008, "How Much Will Your Web Site Metrics Improve?" report.

6 The following resources provide more information about how to measure the value of user experience design and usability testing: Thomas Tullis and William Albert, *Measuring The User Experience: Collecting, Analyzing, and Presenting Usability Metrics*, Morgan Kaufmann Publishers, 2008; Aaron Marcus, "Return On Investment For Usable User Interface Design: Examples and Statistics," AM+A white paper, February 28, 2002; and Randolph G. Bias & Deborah J. Mayhew, (Eds.), *Cost-Justifying Usability*, Morgan Kaufmann Publishers, 1994.

7 Alan Cooper introduced the concept of personas in his 1999 book, *The Inmates Are Running The Asylum*. Since then, the practice of creating personas and using them to drive design decisions has caught on across a broad spectrum of design agencies and their clients. Source: Alan Cooper, *The Inmates Are Running the Asylum: Why High Tech Products Drive Us Crazy and How to Restore the Sanity,*" Pearson Education, 2004.

8 To learn more about personas, see the October 14, 2008, "How To Get The Most From Design Personas" report.

9 Constantin Stanislavski, the inventor of method acting made famous by great actors such as Marlon Brando and Robert De Niro, offers some advice for empathizing with your users in his book *An Actor Prepares*: "An actor is under the obligation to live his part inwardly and then to give his experience an external embodiment." Source: Constantin Stanislavski, *An Actor Prepares*, Theatre Arts Books, 1989.

10 To understand the impact of required registration on conversion rates, Forrester asked US online shoppers what they did the last time they were required to register before making a purchase online. The survey

revealed that almost one-quarter leave the site without registering or purchasing, taking millions of dollars in potential revenue with them. See the April 15, 2008, "Required Registration Lowers Online Conversion Rates" report.

[11] "Je ne sais quoi" is a French phrase that means something indescribable.

[12] *Stargate* is a science fiction franchise that includes movies and television series inspired by the October 1994 release of the feature film *Stargate*. (See http://www.stargate.mgm.com/).

[13] Firms such as InContext Design (http://incontextdesign.com/) and Usability Resources (http://www.usabilityresources.net/) provide complete UX design services and will train your team.

[14] Forrester offers a workshop on "Best Practices In User Experience Design." User Interface Engineering offers many different training options (http://www.uie.com/). In addition, many organizations such as Human Factors International and Bentley University offer certificates in UX.

[15] The key to Web performance is a multidisciplinary approach that focuses not only on raw speed but also on the customer's perceptions of performance. Forrester spoke with a dozen of the leading Web site performance experts — including Web performance consultants, application developers, architects, user experience experts, infrastructure professionals, tool vendors, and performance monitoring specialists. The lessons learned from looking at these top sites are applicable to most enterprises with a significant online presence. See the February 4, 2009, "Best Practices: Attaining And Maintaining Blazing Fast Web Sites" report.

[16] Competing user needs pull designs in multiple directions. For an example of how a persona-based feature prioritization matrix can be used to design for differences, see the September 10, 2004, "How To Design Sites That Satisfy Millions Of Users" report.

[17] More information about how to successfully use paper prototyping can be found in the following source: Carolyn Snyder, *Paper Prototyping: The Fast and Easy Way to Design and Refine User Interfaces*, Morgan Kaufmann Publishers, 2003. Writing copies for Web sites are also important. More information about writing for the Web can be found in the following source: Janice (Ginny) Reddish, *Letting Go of the Words: Writing Web Content that Works*, Morgan Kaufmann Publishers, 2007

[18] Source: Bill Buxton, *Sketching User Experiences: Getting the Design Right and the Right Design*, Morgan Kaufmann Publishers, 2008.

[19] Usability testing can be done easily and inexpensively. One of the best descriptions of discount usability testing is described in Steve Krug's Chapter 9, "Usability on 10 cents a day" in *Don't Make Me Think: A Common Sense Approach To Web Usability, 2nd Edition*, New Riders Press, 2005. Morae software is designed to record and playback everything done and said by a user during a usability testing session. More information on Morae can be found at http://www.techsmith.com.

[20] Heuristic evaluation was originally developed by Rolf Molich and Jakob Nielsen as a lower-cost alternative to lab-based usability techniques. More information on Jacob Neilsen's works on heuristic evaluation, including "How to conduct a heuristic evaluation" can be found at http://www.useit.com/papers/heuristic/. More information on Rolf Molich's peer-reviewed papers on comparative usability evaluation can be found at http://www.dialogdesign.dk/CUE_papers.htm.

[21] To get the most out of the Web Site Review, site owners should identify user goals that drive business metrics, review their sites using the tools available on Forrester's Web site, and fix usability problems identified in the review. See the September 5, 2008, "Executive Q&A: Web Site Reviews" report.

[22] Several low-cost research and usability testing methods can help companies get the insight and feedback they need during the economic downturn. Companies should consider using low-cost techniques to supplement larger efforts during lean times and focus future spending. See the February 3, 2009, "Low-Cost User Research And Usability Testing Techniques" report.

[23] To learn more about security risks and threat modeling, see the March 10, 2009, "Use Threat Modeling To Develop More-Secure Applications" report.

[24] To help customer experience professionals estimate how far their Web site metrics are likely to move as a result of improvements in the customer experience, we aggregated data on the impact of more than 80 site improvement projects. See the October 10, 2008, "How Much Will Your Web Site Metrics Improve?" report.

[25] Forrester is researching how new approaches can improve application development.

[26] More information on Microsoft Sketchflow can be found at http://www.microsoft.com/expression/products/Sketchflow_Overview.aspx. More information on Adobe Catalyst can be found at http://labs.adobe.com/technologies/flashcatalyst/.

[27] For strategies that you can use to empower end user developers and designers, see the April 15, 2009, "Deputize End-User Developers To Deliver Business Agility And Reduce Development Costs" report.

FORRESTER®

Making Leaders Successful Every Day

Forrester Research, Inc. (Nasdaq: FORR) is an independent research company that provides pragmatic and forward-thinking advice to global leaders in business and technology. Forrester works with professionals in 20 key roles at major companies providing proprietary research, customer insight, consulting, events, and peer-to-peer executive programs. For more than 26 years, Forrester has been making IT, marketing, and technology industry leaders successful every day. For more information, visit www.forrester.com.

FORRESTER®