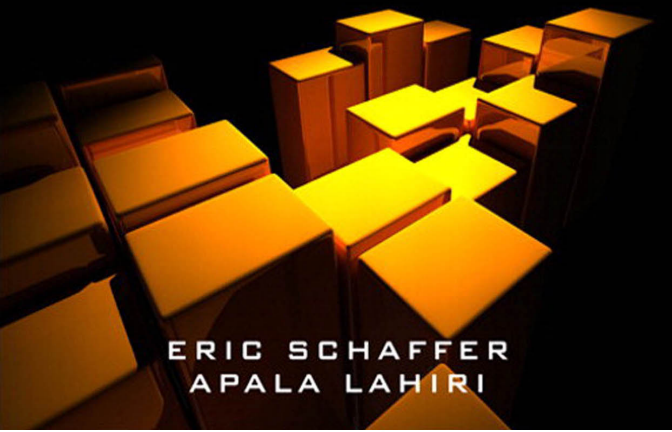
SECOND EDITION

INSTITUTIONALIZATION OF UX

A STEP-BY-STEP GUIDE TO A USER EXPERIENCE PRACTICE



ERIC SCHAFFER
APALA LAHIRI

Institutionalization of UX

Second Edition

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A Step-by-Step Guide to a User Experience Practice

Second Edition

Eric Schaffer
Apala Lahiri

Addison-Wesley

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Library of Congress Cataloging-in-Publication Data

Schaffer, Eric.

[Institutionalization of usability.]

Institutionalization of UX : a step-by-step guide to a user experience practice / Eric Schaffer, Apala Lahiri. -- Second edition.

pages cm

Includes bibliographical references and index.

ISBN 978-0-321-88481-7 (pbk. : alk. paper)

1. User interfaces (Computer systems) 2. Computer software--Development. I. Lahiri, Apala. II. Title.

QA76.9.U83S36 2013

005.4'37--dc23 2013039144

ISBN-13: 978-0-321-88481-7
ISBN-10: 0-321-88481-7

Text printed in the United States on recycled paper at RR Donnelley in Crawfordsville, Indiana.
First printing, December 2013

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Preface

More than ten years ago, I wrote *The Institutionalization of Usability.* Now, so much has changed in the field that a very new edition is needed. For one thing, the name of the field has changed. We now call ourselves "user experience (UX) designers." With that change in title comes new responsibilities. We no longer can focus on simple tasks and human–computer interaction. Systems are embedded everywhere, and we must design for complex *ecosystems.* That means using ethnographically inspired methods and advanced tools for knowledge management. It is no longer enough to make a site or application easy to use. Usability is now a hygiene factor—to be competitive, most organizations must understand how to engineer persuasion into their digital systems. In turn, we need a whole new set of methods and insights that let us systematically design for engagement, psychological influence, and customer commitment.

The field has also reached up the value chain within organizations. A UX team that deals with only the details of radio buttons and check boxes is committing a disservice to its organization. Today UX groups must deal with strategy. We must help define how executive intent can be turned into successful designs and the desired business results. So the executive wants to transition customers into low-cost, digital channels—why will the customer want to make that transition? The UX team must design the cross-channel integration and optimization so that customers will understand which channel to use and will experience a common but appropriate interaction on the Web, mobile device, tablet, or other device.

Finally, the UX team is a key component of the organization's innovation process.

When I wrote *Institutionalization of Usability,* the idea of a mature, industrial-strength practice seemed remote to most people. I debated

this topic with the great usability pioneer Jared Spool in a session that was billed as "The Celebrity Death Match." His argument was that usability could be practiced only as craftsmanship—that it could not be institutionalized. Yet I was already institutionalizing it within my own company, Human Factors International, Inc. (HFI), and starting to help my corporate clients build their own practice. Today, most organizations of any size and sophistication are building UX teams, and there is widespread recognition that customer-centered design is the best practice for system development. In the process of helping to mature our clients' UX teams, we have learned quite a lot.

The challenges of institutionalization have clearly changed. In the past, the major issue was securing executive championship. Today, however, most high-level executives understand that customer experience is a key business goal. They have read about the user experience economy, seen Apple Computer thrive, and read innumerable executive briefings on customer experience. Unfortunately, these executives often have no idea how to bring about UX, and they take a fairly predictable set of wrong paths to try to make it happen. In addition, there are still challenges in culture change and governance—cultural and organizational design issues are pivotal today. Staffing also poses serious challenges. It is common for organizations to get perhaps 2% of the UX staff they need and then drop the initiative when they find that their designs have not substantially improved, and their UX team seems demoralized. Yet the pool of qualified UX specialists remains small. HFI is by now quite experienced in hiring practices, internal training, and the use of offshore resources.

Setting up a UX infrastructure today is relatively easy. Training and certification are available. Methods and standards simply need to be customized to fit an organization's needs, and plenty of new UX tools can be readily accessed. These foundational components should no longer be an impediment to creating a UX capability.

The best practice of UX work has been a bit of a surprise. My initial thought was that institutionalized UX work would be like what it was in the 1990s, except that there would be more of it. I thought implementing UX would involve more craftspeople and apprentices. They would have methods and standards, of course, but, I

thought, the experience would essentially be more of the same. Instead, it turns out that pivoting to a serious UX practice entails fundamental changes in the way the work gets done. We have even seen the dawn of object-oriented UX work, which optimizes reuse.

Finally, in this book I would like to introduce Apala Lahiri, CEO of HFI's Global Customer Experience Institute and an expert in cross-cultural design. The Institute has one objective: to answer the question, "How does one best operate a UX practice that must design for users worldwide?" Do we need to have a UX team in each of our 115 target countries? Clearly not. Yet Apala's motto is "think globally and lose locally." A design created for "the world" will rarely compete with a design created with sharp focus on a given culture and context. Based on my experiences, and with Apala's contributions, we will share the current best practices for a global UX operation in this edition.

—Eric Schaffer

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Acknowledgments

This book was drafted from my personal experience with thousands of individuals who, over the last thirty-five years, have struggled to instill usability engineering capabilities within their companies. While I cannot possibly name them all, I am sure they will see themselves within these pages, sharing their insights and knowledge through my eyes. This book is theirs more than mine.

I would like to thank Dr. Robert Bailey, Dr. Darryl Yoblick, and Gary Griggs, who were my mentors when I first joined the field. Without them, I don't know if I ever would have figured out how to do this work right. I would also like to thank the pioneers of institutionalization who created effective usability departments. Among these, special thanks go to Dr. Arnie Lund, Dr. Ed Israelski, and Dr. Tom Tullis, from whom I learned much.

I would like to thank the staff at Human Factors International, Inc. (HFI). Our president, Jay More, has been at my side for nearly twenty-five years, helping me to see usability from a business perspective. I am indebted to Dr. Phil Goddard, Dr. Susan Weinschenk, and Dr. Kath Straub for their technical contributions and review of this book. Indeed, my entire staff at HFI has contributed in many ways to this book, developing methods, sharing ideas, and working directly on the book itself.

I would like to thank the pioneering clients I have been able to work with in applying institutionalization strategies. In particular, thanks go to Abdul Notcha, Amanda Seboli, Reynard Uys, and the other leaders at Standard Bank who have been so supportive of advanced work toward industrial-strength customer-centricity. And a note of thanks to my editor at Addison-Wesley, Peter Gordon, who has supported both editions and provided invaluable counsel and support. Thanks go also to Douglas Gorney, who helped refine the manuscript, making your reading experience far better.

Finally, I would like to thank Apala Lahiri, who has been a great innovator in the transition of the field to process-oriented work, not to mention her contribution to the internal design strategies that she shares in this book.

—Eric Schaffer

Read This First!

Cultural Transformation

- This is a journey to create a user-centered organization.
- Change your organization's focus from building lots of functions to meeting user needs.
- Change your organization's focus from developing cool and impressive technology to creating software that is simple, practical, and useful.
- Help executives and project managers focus on the value of user experience design.
- Customize and follow a systematic and complete process for institutionalizing user experience design.

You are embarking on a program to institutionalize user experience design in your organization. What is the long-term view? You may find that your company already has some of the organization or groundwork in place, and you may be well on your way to establishing a user-centered process. This book can help you get all the way there—that is, to a full, mature practice. If you are starting from scratch, you can expect it to take about two years before the full implementation is in place and user experience design has become

routine. Significant benefits and progress will occur before then, however, and you'll recognize and appreciate gains as you work toward full implementation.

Of course, some setbacks may occur along the way. These almost always come in the areas of mindset, relationships, and communication. Remember that we are changing the way people think about design. We may move control of the design process to a new set of user-centered staff, and those changes can be contentious. Even so, these setbacks will illuminate the deep issues that you must work on continuously. These issues are explored in the first chapter of this book and are **not** fully covered in the following chapters, which explore infrastructure components, staffing requirements, and other activities. We will talk about cultural change here because it transcends the surface level and permeates the whole initiative. Addressing these issues involves shifting the core belief system of your organization, and that is why they are so important to consider early in the process.

For decades, a major thrust of the user experience field was to train developers to create better interfaces. Today, however, there is a clear global understanding that user experience design is best done by specialists in the field. The user experience design field is quite complex, skill intensive, and always growing. For these reasons, it generally does not make sense to have these responsibilities be the part-time job of a developer or business analyst. In addition, the characteristics of a good user experience designer are generally very different from those of a developer. It is a bit like asking the engineer who specializes in the tensile strength of steel to design the architecture of a building, decorate the entrance, and arrange the flowers on the side table. In our case, the business analysts and technical staff need to accept the user experience design staff and work with them effectively.

Unless the internal environment is changed through training and repeated showcase projects, there is a large natural disconnect between the viewpoint of the user experience design staff and that of the technical development team. It's not unusual to experience some conflict and misunderstanding. If developers or business analysts have been doing the interface design, they will be attached to

their designs, so criticism will likely create hard feelings. People also tend to be attached to their design decisions (like the use of tree-view menus as a solution to all navigation). People see the world in terms of their own context, and it can be difficult to get them to see the user's viewpoint. What is even harder is taking control of the user experience design from staff who have previously had control over these decisions (even if their skills, processes, and tools did not allow for a successful outcome). Certainly, it is possible to train, and have some user experience design tasks be done by technical staff or business analysts. Nevertheless, the control of the user experience design effort must always be placed within a central user experience design group.

Once you realize the value of user experience design engineering, it is difficult to be patient with those who haven't made this leap in understanding. But ignoring the hard work of shifting others' perspectives makes it likely that all your accomplishments will do little. Good standards and facilities will sit idle if these deeper shifts fail to happen. The following section explores the deep changes that the real institutionalization of user experience design requires.

Changing the Feature Mindset

A deep philosophical change must take place in the shift to user-centered development. Most companies build applications intent on meeting a given time frame and providing a specific level of functionality. There is a whole flow of feature ideas, but this flow is not really user centered; rather, it is usually a combination of executive inspiration and customer comments. So how can a selection of features based partly on customer comments and requests not be considered user centered? Certainly, customer comments need to be considered (mostly as a way to discover bugs). But listening to customer comments merely gives the illusion of listening to the user. In many situations, these "customer" requests come from executives, marketing departments, or sales staff. They are not in any way representative. The real user is not studied or fully understood by most of these well-meaning "user representatives." In other situations,

comments do flow from actual users. The users may share ideas, but typically only very happy or very angry customers send feedback. Also, these comments tend to focus on features, rather than the overall design, error handling, page layout, or other user experience design issues. The result is the design of features that may not represent the needs of the majority of end users and may not address the application as a whole.

It isn't enough to just apply standard user experience design techniques such as user experience design testing, because just applying techniques does not address the underlying issue. There is still a need to change the focus away from functionality. Software developers often build applications that have unneeded functions. They focus on completing a checklist of features for each product. Unfortunately, a clutter of irrelevant features makes the product harder to use. The whole focus of the development team is on creating all these functions on time, but if those functions are not needed or cannot be used, is timeliness so important?

It will take some work to get your organization to understand that the function race was one of the roads to success in the 1990s, but is no longer critical. Certainly, users want features. Some users focus on obtaining the maximum set of features and actually thrive on the challenge of learning their operation, but they typically comprise a small group of early adopters. In this new millennium, software and website developers must deliver adequate features that are simple and useful. Most users want information appliances to be as easy to operate as a toaster—practical, useful, usable, and satisfying solutions. Achieving this feat requires a broader change to the mindset of design and development.

Changing the Technology Mindset

Most people who work in information technology (IT) love the technology. They are in the field because technology is fun, challenging, and impressive. The developer's job is to understand the technology and use it. Therefore, developers naturally focus on learning about the technology, and they feel excited about using the latest,

most powerful facility. To a degree, this bias creates development groups that are more focused on creating something impressive and cool instead of practical and useful.

Knowledge of the scientific principles, together with working with user experience design engineers, helps create a major shift in the way that IT professionals see technology. Technology is a tool that lets you meet user needs. Much like a professional carpenter who picks the tool that best meets the need and does not anxiously seek an excuse to use the latest hammer, developers need to focus on creating the design that customers need, rather than just exercising the software technology that will make them feel proud.

The people who have to use the things we design may not be using a product because it is new and fun. Although there are always early adopters, most technology users want to use your design to get something done—get information from a website, pay their bills online, or look up directions, for example. Most users are not looking for technology that is challenging and interesting; instead, they want the **result** to be useful and interesting. In fact, many users expect the technology to be not challenging but actually transparent. Professional developers are often intrigued by the technology and its quirks. Users often find the same quirks annoying.

Changing the Process Mindset

In organizations that are dominated by business analysts, the focus can be on defining and optimizing efficient processes. This approach might sound like it would be a good one from a user experience design viewpoint. In fact, there is a very big difference between efficient processes and customer-centered design. You might create a generic account origination process that covers all the functions necessary in a very efficient way. There might even be efficiencies put into place, such as the concatenation of multiple account origination requirements so that the user will never have to enter the same data twice. But would this be optimized from the user experience design viewpoint? It might not. The user might need to think about each account separately. It might make more sense to

customers to configure each account as a unit, because they think about each account separately. In contrast, a logical functional model might have the beneficiaries set up all at once and then the alerts established all at once. The functional analysis would also probably include the customer's data (e.g., name, addresses) first in the flow, as this is more logical. But user experience design experts know better than to implement this model: You want to first configure the accounts so that the customers feel ownership and have an investment in their acquisitions. Only then should the application ask for the boring registration details. In this way, customers become invested in the accounts and are unlikely to abandon the application.

Business analysts with a functional viewpoint can be wonderful supporters of a user experience design effort. With training, they can really contribute to the design workload. Nevertheless, an organization that is focused on process efficiency needs to be brought around to see that success requires much more than a functional viewpoint.

Changing the Graphics Mindset

Good-quality visual design is often an important part of a successful user-centered design. It generally increases trust. Moreover, visual designs that are developed around focused persuasion engineering strategies are very powerful. But visual design is only a small part of what it takes to be successful in user experience design. In fact, interesting counter-examples can be cited. A target population such as "youth," for example, would seem like a natural fit for exciting graphic treatments. Yet Facebook is wildly successful with youth, even though its graphics are limited and unimpressive. Why? Because Facebook fulfills a set of fundamental needs for youth.

Some organizations equate user experience design with rich and polished graphics. When this is done without exploring the underlying strategic and structural design, it is like putting lipstick on a

bulldog. The results are not pretty. Executives are often focused on the appearance of the design, but this is a common mistake.

Some executives seem really wedded to the graphic issue. In a way, this emphasis might simply reflect the fun of doing uncontrolled graphic work, much in the same way that people love to select colors for their house or clothing. In classic visual design work, the graphics team often focuses on creating a design that pleases the executive. Their criterion for success is that the executive likes it. In such a case, the graphics team creates one good design and two bad designs, and then they hope the executive picks the good design from the lineup. There is no real measurement of success, so the process of graphics development can be free, easy, and entertaining. In contrast, in serious graphic development, the design needs to be informed and validated. The criteria for success, in turn, are based on observed user behavior.

Graphic designers can be trained and can learn to do the more analytic and interpersonal work of the user experience design practitioner. Even the most sophisticated creative directors, however, do not have training in the user experience design field.

Executives

Today, it is hard to find an executive who does not care about customer experience. As executives around the world play the chess game of business strategy, most of them are having the same realization: Every organization can get hardware that works (usually better than really matters), and every organization can get software to run and not crash and hold tons of data. Thus, there is now one primary differentiator among companies in the digital space: customer experience. Today, the organization with the best customer experience wins.

Top executives are usually determined to optimize their organization's customer experience, but they usually try things that don't work well. They give passionate speeches that address caring about

customers, with sweet stories describing how their kids were treated in Disneyland. In reality, the problem with digital customer experiences is not a problem with staff motivation. Being motivated does not make for good designs. Being motivated without the training, and certification, and methods, and standards, and tools of the user experience design field just makes for dispirited staff—and shouting at them until they panic just makes things worse.

Some executives get frustrated, rip off their ties, roll up their sleeves, and start designing interfaces themselves. Of course, most executives have no human–computer interface design skills. What they create makes sense to them (because they know what it's supposed to do), but it rarely makes sense to the users.

Some executives think that "customer-led design" means design work that is "led by customers." As a result, they arrange for real customers to be a part of the design process. Unfortunately, users are not designers, so they don't know what the designs should be. Also, the users allocated to the design committee are really never representative (you tend to get either users who are experts in the software or users who are below average and therefore expendable). In addition, the users quickly become less representative as they learn the organization's viewpoint and language, so they quickly stop being even a good source of insight into "how things are" (subject-matter expertise).

Exhausted by the effort, senior executives finally turn to other key areas such as security and advertising. They decide that user experience design is a mystical thing and hope that a miracle occurs. With luck, the scattered user experience design people in the organization will climb up the organizational structure and share a clear understanding of what it takes to make an industrial-strength practice in user experience design. Otherwise, the whole initiative dissipates—perhaps to be reinvigorated later by a startling loss in market share, wasted design efforts, or a change in leadership.

When presented with an understanding of the requirements for the development of a mature practice, many top executives become very excited and want to get started right away. It is a challenge to persuade them to carefully plan the overall institutionalization process.

In many cases, they may demand to start something tangible, at which point they typically kick off a user interface standards program. Even worse, they may insist on persona definitions (at the end of which, no one will be sure why you spent so much money). This "Ready, fire, aim!" approach results in an inefficient, uncoordinated, and unreliable path to a mature practice—so please insist on a strategy before serious investments start.

Changing Middle Management Values

While the development community makes the move away from fixation on features and new technologies, middle management must also change. Management is used to asking whether milestones are met and budgets are under control and establishing compensation schemes that reinforce the need to produce functions on schedule. This approach has worked well in the past, but it won't work well in the future. Things that were thought of as secondary intangibles and "nice-to-haves" must be quantified and managed, because those "soft" design capabilities are now the key to the organization's future.

Management must understand that the company is building not just systems that will function, but also systems that will work in the context of a given range of users, doing a given set of tasks, in a given environment. Success is measured as the real business value of the application. Achieving success takes much more than just delivering the website or application on time. The deliverable must be usable and satisfying to operate. In many cases, the emotional engagement and resulting conversion of customers is the real target. And it is not enough to simply make designs that are easy to operate. The target outcome of the design will depend on the organization and may include increased sales or enrollment, more leads, increased willingness to pay fees, larger sets of items per purchase, and so on. These are the results that user experience design buys you. Few organizations will not directly benefit from good user experience engineering.

Once organizations realize that user experience design is a key area in ensuring their success, they sometimes will charge executives with making improvements, which is great. Unfortunately, they often compensate those executives based on moving the results on a customer satisfaction survey up a fraction of a point. This is not quite right, as customer satisfaction ratings don't really equate to user experience design quality. Instead, they are more like a rough indication of whether the customer's expectations are met. You can probably lower a customer's expectations and get a nice jump in satisfaction.

Advice for Those Considering an Investment in User Experience Design

Harley Manning, Research Director, Forrester Research

The single biggest gap in knowledge we see at Forrester is a lack of understanding of *what* and *why*. *What* makes for a great user experience, and *why* you should care—tied to numbers. That's the great barrier. People must understand that there are objective methods of improving user experience and that user experience moves business metrics.

The second biggest gap is a lack of the right skills. We see a hierarchy of skills, process, and organization, where skills are the most important. Whether you try to do this kind of development internally (which is a trend we see) or hire out, you still need somebody on the inside with a deep clue. Otherwise, you're not going to follow the right processes, even if you have them in place, and you're not going to hire the right vendors or manage them effectively.

Regarding processes, there are many good processes out there—just pick one and use it consistently. I was talking with the Web development team at Michelin Tire, and I said, "You guys don't wake up in the morning and say, how should we manufacture tires today, do you?" And they said, "Of course not, but we never thought of a website that way." They're smart—as soon as I said this, they got it.

Business schools have always taught about marketing issues and brand management, but now they must go further. Marketing can point out a potential market niche; user experience engineering can help build a product that will reliably succeed in that niche. The implications of poor user experience design can be catastrophic for a company. It therefore makes sense that executives and senior management attend to this critical success factor. Project and business line managers are interested in identifiable metrics. As user experience design matures within an organization, it is not enough to occasionally review the latest "customer satisfaction rating" or "net promoter score." Depending on the type of website or application, managers must be concerned about task speed, task failure rates, drop-off rates, competitive metrics, return on investment (ROI), retention rates, and other factors. Executives must be aware of and support a user-centered process. Perhaps most importantly, middle managers must care about user experience and performance levels as an essential success factor.

Changing the Process for Interface Design

Many companies expect developers to sit down and just draft the interface design without doing expert reviews, data gathering, or any testing. If your organization currently uses this approach, you must be willing to learn and use a different approach. User interface design must be an iterative process. You sketch and prototype an interface, then change it, then get feedback from users, then change it, again and again. There are two reasons why effective interface design must be iterative:

1. Design is a process of deciding among many sets of alternatives. Getting them all correct the first time is impossible.
2. As users see what an interface is actually like, they change their conceptions and expectations—so the requirements change.

User interface design, by its very nature, is too complex for anyone to accomplish successfully without feedback. Even user experience

User Experience Design within Government

Janice Nall, Managing Director, Atlanta, Danya International, Inc.
Former Chief, Communication Technologies Branch,
National Cancer Institute

There are probably three or four core things we have done to institutionalize user experience design. Number one is involving the leadership—through presentations and participating in testing or showing them results of a usable site versus an unusable site.

Number two is using the language from leaders driving the new trend to e-government. Because the National Cancer Institute is part of the government, it helps to be able to tell our leadership that user experience design and user-centered design are supported, from the president of the United States to the Office of Management and Budget to the Department of Health and Human Services (HHS). Using their own words, language, and documents has been very powerful.

Number three is training, which has been hugely successful—a way to institutionalize user experience design across HHS and the federal government. We believe in teaching people to fish rather than feeding them the fish. We also use tools and resources, like the Research-Based Web Design and User Experience Design Guidelines, to teach them.

Number four is our list of about 500 federal people who receive our online publication *U-Group* (shorthand for *user experience design group*) via the U-group listserv. Through this listserv, we are trying to get current information out, and we're saying, "Let's share information; let's collaborate"—encouraging people to share lessons learned.

design professionals with decades of experience don't expect to sit down to design a screen and get it right the first time.

Everyone developing software and websites needs to remember that both development and design are iterative processes. Being brilliant does help, but the willingness to get feedback and apply it selectively is more important. Designers must be willing to learn and create better designs each time, and organizations need to have a culture that supports such iterations without blame.

The Step-by-Step Process for Institutionalizing User Experience Design

The final deep challenge is the tendency to address user experience design in a piecemeal fashion. Many companies that see the value of user experience design still attempt to address it with a series of uncoordinated projects. Instead, there must be a managed user experience design effort. This section outlines the process covered in this book. It is gleaned from experiences of working with hundreds of companies across thirty years within the field of user experience design at Human Factors International, Inc. (HFI).

Figure 0-1 illustrates the typical flow of activities for institutionalizing user experience design in an organization. You need to make sure these activities fit with your corporate culture and circumstances. In fact, you cannot hope to be successful if you treat this process as you would treat steps within a simple kit. To succeed, you must proceed consciously and creatively. Since 1981, HFI has worked with many companies and organizations that have not institutionalized user experience design yet and many others that have made this transition. Based on thousands of projects and experiences with hundreds of clients, HFI has distilled, tested, and refined the key elements that lead to success. Hundreds of companies, large and small, have followed this process and experienced more efficient user experience design methods and processes, as well as more effective products and applications.

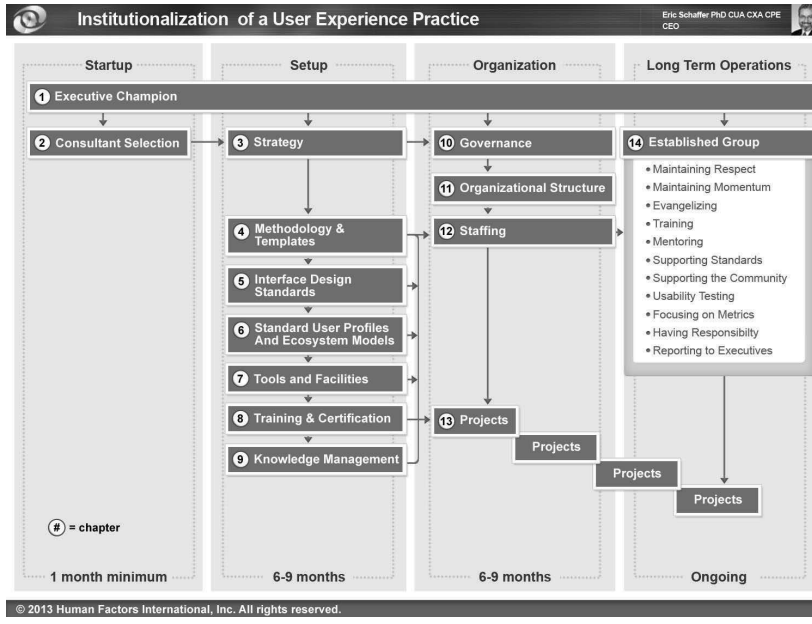

Figure 0-1: *Overview of the institutionalization of user experience design*

The following sections briefly describe each of these phases—Startup, Setup, Organization, and Long-Term Operations. Later chapters discuss each step in detail.

The Startup Phase

In the 2004, in *Institutionalization of Usability,* there was a whole section on how a company needed to experience a horrid disaster to provide a wake-up call. Only then would the organization really move forward. Today that is no longer true—user experience design is becoming a recognized global best practice in development. Nasty wake-up calls are no longer needed. Instead, enlightened executives can often understand the need based on their past experience and education as managers. Even so, the key to success with such a venture remains the identification of an **executive champion**. This person provides the leadership, resources, and coordination for going forward. This person takes the wake-up call to heart and moves institutionalization forward within the organization. The executive champion must be at a high enough level in the

organization to motivate coordination across the siloed groups that affect customers. That person must also be able to influence the total development budget.

It is challenging to start a user experience design institutionalization program from scratch without help from a user experience design **consultant** who has experience, training, tools, intellectual property, and an established team. To establish this program, you must have or create an internal user experience design manager and an internal team—but you will need help from a consultant to set up a serious practice. Selecting a consultant is important because you need to find a person or company that has the skills and infrastructure to help your organization move ahead quickly. The consulting organization will often have to meet immediate tactical needs, complete showcase design projects, and concurrently set up your internal capabilities.

The Setup Phase

We always tell organizations that "Well begun is half done." When you set up a hospital, there are lots of interdependent systems that need coordination (e.g., walls, pipes, elevators, cables, operating manuals, and organizational designs). It is much the same with a user experience design practice. First, you need a **strategy** that fits your organization. The strategy should be specific about what will be done. It should include the timing, sequence, validation, and funding that will be necessary for your user experience design program to be successful. You may prefer to start with a short-term strategy that establishes the basics and then let the strategy evolve over time, or (ideally) you may develop an all-encompassing, multiple-year project plan.

Every company has a **methodology** for system development. It may be home-grown or purchased, but in either case the existing methodology is unlikely to do a good job of supporting user-centered design. It is important to have a user-centered design method in place—one that is integrated with current methods and accepted by management and staff. Otherwise, there is no common road map that will pull user experience design engineering into the design process.

Interface design standards are usually a high priority in the institutionalization process. Standards are easy to justify because they help both the developers and the user experience design staff. Even if you have several user experience design staff members on a project, you will likely have poor results if standards are lacking. The experts may independently design good interfaces, but their designs will be inconsistent and incompatible. Moreover, if the standards are not developed quickly, there will be an ever-growing installed base of inconsistent designs.

Without a central standardized set of **user profiles and ecosystem models,** you will find yourself paying to repeat research. And what is worse, the research you do will probably be underfunded (because it is justified by just one single project) and, therefore, will provide a weak set of insights about customers. It is far faster, cheaper, and better to have a central model of your customers and staff. Research can then be carried out and added to this model. In turn, the model gets richer and richer instead of accumulating a daunting stack of reports.

There is a whole toolkit of **tools, templates, and testing facilities** that you need to be able to work with effectively as part of user experience design. This toolkit should include a venue for testing, templates for questionnaires and deliverables, and user experience design testing equipment.

Of course, it makes no sense to have methods, standards, and tools if the skills to use them properly are lacking. The initial strategy for institutionalization of user experience design should include **training and certification** for in-house staff. You can provide general training for the development community and more extensive training and perhaps certification for those individuals who will be interface development professionals. Out of this training, staff who are talented and interested in the user experience design field will probably emerge.

During the Setup phase, it usually makes sense to have one or more **showcase projects**. Conducting these projects provides an opportunity for the infrastructure, training, and standards to come together, be shaken out, and be proven. Such projects also offer a chance to

share the value of user experience design with the whole development community.

The Organization Phase

With successful completion of the Setup phase, you have a solid and proven infrastructure for user experience design work, methods, tools, and standards, as well as a process that works. At this point, you need to ensure that the practice can operate effectively within the organization. The main issue to pay attention to is **governance**. Will the user experience design practice be brought into your design programs? Will the recommendations and designs from the team actually be used? Will there be metrics that ensure that everyone focuses on user experience as a key area? Each of these questions springs from serious challenges faced by organizations worldwide. If a set of appropriate measures is not taken, the problem of governance will likely derail the entire effort.

It remains important to follow the **organizational design** principle of spreading user experience design throughout your company or agency. User experience design should not reside within a single group or team; instead, to succeed, user experience design must permeate the entire organization and become part of the system. In all cases, you need a small, centralized, internal group to support your user experience design initiatives. For medium- and large-sized companies, user experience design practitioners need to report to specific project teams. The executive champion needs to establish the right placement and reporting for the group and the practitioners.

The Organization phase is the appropriate time to start **staffing** the organization. Now the full process of user-centered design is working within your organization, and you can see the best way to put a team into the framework. The steps you went through in the Setup phase provide a clear understanding of the types of people needed. Remember that about 10% of your development headcount should be user experience design professionals.

When establishing a central user experience group, it is best to pull together a critical mass of your strongest practitioners. In the prior

training process, there is a good chance that several people will have stood out. This is part of the reason that the internal organization is generally established after the initial training—it provides an opportunity for the best internal staff to join the team. It is usually important to hire some additional highly qualified user experience design staff. In this way, the organization benefits from both insiders who know the corporate culture and outsiders who are more knowledgeable about user experience design technology. A manager of the central user experience design group should be the main "go to" person for the user experience design staff.

With the user experience design staff in place, it is time to apply user experience design methods to a whole wave of **projects**. Doing so delivers immediate results and value. It will soon be possible to have every project completed with appropriate user-centered design methods, but in the immediate future you are likely to need to manage a shortage of user experience design staff. To remedy this problem and to cost-effectively manage large volumes of user experience design work, offshore user experience design teams can be a worthwhile addition to the overall staffing strategy.

The Long-Term Operations Phase

The established **central group** now has an ongoing role in supporting the user experience design engineering process. This role includes the maintenance of the user experience design infrastructure and skill sets within the organization. User experience design practitioners should now be involved in all development work, following the user-centered methodology and applying the resources established in the Setup phase and continually updated by the central user experience design team.

As the user experience design institutionalization effort matures, the relatively informal executive champion may give way (or be promoted) to the chief user experience officer (CXO). This is *not* a chief user experience design officer, but rather a broader role. The CXO is responsible for the overall quality of customer experience. Being a CXO requires expertise in user experience design, as well as

a thorough understanding of many other disciplines, including aspects of branding, marketing, graphics, and content development. The CXO must be able to reach across lines of business to ensure compatibility of presentation and messaging. If the role of CXO is not established, the central user experience design team should be placed under some executive organization, such as marketing, and the company must ensure that the team members receive good executive stewardship.

Summary

In choosing to set an institutionalization process into motion at your organization, you are choosing to change the feature mindset, technology mindset, management values, and process for interface design that previously governed your operations. This bold move requires the commitment of staff and resources. Organizing your activities to align with the step-by-step process outlined in this book will help ensure visible progress. While this book presents a step-by-step approach, clearly this sequence may vary at specific organizations. Most organizations must face the problem of "changing the wings while the plane is in flight." At HFI, we must often use our own staff to meet our client organization's immediate needs, while we concurrently develop internal capabilities. This is not all bad, as we can use the immediate programs as a training opportunity for internal staff and as a proving ground for methods and standards.

Chapter 1 outlines some of the more typical wake-up calls to user experience design that companies experience. An exploration of some of the more common reactions to these experiences is valuable for capitalizing on initial momentum.

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About the Authors

Dr. Eric Schaffer, founder and CEO of Human Factors International, Inc. (HFI), has gained a reputation as a visionary for recognizing that usability would be the driving force behind the "Third Wave of the Information Age," following both hardware and software as the previous key differentiators. Much as Gordon Moore realized that processor power would double every eighteen months, Dr. Schaffer foresaw that the most profound impact on corporate computing would be a positive online user experience—the ability for a user to get the job done efficiently, easily, and without frustration.

Dr. Schaffer has completed projects for more than 100 *Fortune 500* clients, providing user experience, design consulting, and training. He has extensive experience in the financial, insurance, manufacturing, government, healthcare, and telecommunications industries. Dr. Schaffer codeveloped The HFI Framework, an ISO-certifiable process for user-centered design, built on principles from

human–computer interaction, ergonomics, psychology, computer science, and marketing. In addition, Dr. Schaffer has brought an array of certification programs to the user experience field, including the Certified Usability Analyst (CUA) and the advanced Certified User Experience Analyst (CXA) designations for user experience practitioners, and the Certified Practice in Usability (CPU) and Certified Usable Design (CUD) programs for organizations.

Apala Lahiri, global chief of technical staff at Human Factors International, Inc. (HFI), and CEO, Institute of Customer Experience, is one of the world's top experts in cross-cultural design and contextual innovation. Her innovative and pioneering techniques have benefited global giants such as HP Labs, Adidas, Nokia, Sony Ericsson, NCR, and Intel, among others.

Ms. Lahiri's vast array of data-gathering techniques—such as the Bollywood Method, Bizarre Bazaar, and Funky Facilitator—help companies understand user experience in diverse cultural and economic environments. The "Ecosystem Chart," developed by her team, organizes vast amounts of ethnographic data into a coherent model.

Serving with HFI since 1999 as managing director, HFI India, and as vice president, HFI Asia, Ms. Lahiri creates user experience strategies for organizations seeking a breakthrough user experience for their customers and other stakeholders. Her writing and classes on contextual innovation, ecosystem research, internationalization, and designing for emerging markets have won her acclaim in the United States, Canada, Europe, India, and China.

In addition to her usability certifications (CUA and CXA), Ms. Lahiri holds an M.Sc. with distinction in User Interface Design from London Guildhall University. She is also an award-winning designer (recipient of the Audi International Design Award) and a TedX speaker (http://www.youtube.com/watch?v=MiwjplU6kAc).

Ms. Lahiri coedited *Innovative Solutions: What Designers Need to Know for Today's Emerging Markets* (CRC Press, Taylor and Francis Group, 2010).

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Chapter 1

The Executive Champion

- We don't need a train wreck—most executives are interested.
- The value of classic usability.
- The value of advanced user experience design.
- The CEO wants a great customer experience now—don't fall for usability fads or half-measures.
- Who can be a champion?
- The role of the executive champion.

Today, thankfully, few organizations need a disaster before they can get serious about usability. Most executives understand that customer experience is a key foundation for business success and a key differentiator. Many understand that the user experience of internal staff is also critical, and they will talk about ensuring that the organization is a "great place to work." For most of us, then, there is little convincing about the value of usability needed at the senior level of organizations. We don't need to wait for a "wake-up call" in the form of a decline in market share, rejected offerings, or rage in the social media space. For the most part, executives know that user experience design is important (even if they don't really understand what it is or what it takes to make it happen).

However, initiating or even discussing a serious user experience design practice often entails describing its exact benefits. The setup of a serious practice will usually cost $800,000 to $1.4 million, with an ongoing operation amounting to about 10% of the overall design expenditures. Those are numbers that require more justification than just a gut-level desire and some encouraging press.

The fact that you are reading this book suggests that you know that there is an ironclad case for user experience engineering. Nevertheless, this chapter will review the arguments for the value and criticality of this work so that you have the information readily available when you need to convince others that usability is worthwhile. Keep in mind that it is very rare to find an organization that decides to do serious usability work based solely on numeric calculations (such as ROI). Most organizations seem to need more—they need to see the work pay off in their own environment.

The Value of Usability

The need for basic usability is very real. It is really a hygiene factor, a basic requirement in most industries. Both consumers and technology companies have accepted that if a product is easy to use, more units are sold and the product requires less maintenance. There was a time when you needed to argue that point—but no longer. Usability specialists ensure that software is practical and useful. Primarily, though, usability work focuses on user experience and performance. These elements can be measured and quantified in terms of characteristics of the user:

- Speed
- Accuracy
- Training requirements (or self-evidency)
- Satisfaction
- Safety

By applying usability engineering methods, you can build a site or an application that is practical, useful, usable, and satisfying.

Experiencing the Wake-up Call and Beginning a Usability Process

Pat Malecek, AVP, CUA, User Experience Manager, A.G. Edwards & Sons, Inc.

In 1999, we began a process to greatly and ambitiously reengineer our public and client-facing Web presence. An army of us just plunged right in and started marching right along. In the eleventh hour, we solicited an expert review from an external source. That expert review said that one of the critical applications, or critical pieces of our new Web presence, was unusable. And by the way, you need some usability people.

If I look back, I'm pretty sure that was the impetus for the creation of what has become my team and a recognition of usability issues. Almost immediately thereafter—within months—we had brought in training and crystallized the efforts.

I remember reading Eric's white paper, "The Institutionalization of Usability" [Schaffer 2001], and thinking, "This really sets the course for what we're up against." That paper says that going through the institutionalization process takes about two years. From the hard lessons I mentioned before up to today, it has been about two years.

Which steps have we taken? Well, we obviously hired people who had the skills or at least closely matched the skills we needed. Then we brought in multiple training opportunities to our campus. We've also sent people out for training. We have endeavored to incorporate my team and usability practices into the development methodology. We have representation on various committees that steer development, and we're also represented on essentially all Web-based projects. Our usability team is located within the Internet Services Department (ISD). ISD basically owns the Internet channel—anything that's delivered via the Internet or our intranet. We are involved as much as possible in everything that channel delivers.

In a *Dilbert* comic strip, Scott Adams had Dilbert present his manager with a tough choice: either spend a million dollars to fix the incomprehensible interface, or close your eyes and wish real hard the users won't care. The manager is left with eyes closed, wishing intensely, and thereby saving all that money.

Usability does require an investment. It costs money to provide staff, training, standards, tools, and a user-centered process. It takes time to establish the infrastructure. You may need to hire consultants and new staff.

Is it worth spending this money and time setting up a usability effort? Harley Manning, Vice President & Research Director of Customer Experience Practice at Forrester Research, posted on one of the studies that have shown a correlation between capability in user experience design and stock price [Manning, 2011]. While many factors affect share price, companies that are customer experience leaders clearly do better than customer experience laggards, even in a bear market. It really seems like investors have understood the criticality of customer experience. When HFI awarded ROLTA a certification for its usability practice, an article in *Yahoo Finance* ("ROLTA India Accelerates on Receiving an HFI Level V Certification") cited a 5.33% increase in share price. It is actually not a very surprising result when you look at the more detailed numbers.

It is common for a usable website to sell 100% or more than an unusable one [Nielsen and Gilutz 2003], and for site traffic, productivity, and function usage to more than double. Unfortunately, it is also common to see developers build applications that users reject because of lack of usability. For example, clients who have come to HFI recently include a major service provider whose new sign-up process had a 97% drop-off rate and bank with a voice response system that achieved only a 3% usage level. There is no question that usability work can prevent these types of multimillion-dollar disasters.

If you follow a user-centered design process, you can expect to spend about 10% of the overall project budget on usability work [Nielsen and Gilutz 2003]. This includes everything—from evaluation of previous and competitive designs to data gathering with

users, to the design of the structure, standards, and detailed screens. It also includes usability testing.

There is a lot of work to do, and 10% is a big fraction of the budget. The good news is that the overall money and time required to create an acceptable site or application are unlikely to increase. In fact, the cost is likely to go down for several reasons, some of which are discussed in the following subsections.

Reducing Design Cycles

Today, it is still common to have projects that require major rework because the application does not meet user needs or is unintelligible to users. Implementing good usability practices greatly reduces the chances of having to rework the design. The cost of retrofitting a user interface is always staggering. The cost can be substantial if the detailed design must be improved. Nevertheless, these changes in wording, layout, control selection, color, and graphics are minor compared with the creation of a new interface structure.

When people use a site, Web application, software, camera, or remote control, the part of the product that the human interacts with is the **interface**. The interface, therefore, is the part of the product that gets the most usability attention. The **interface structure** determines the interface design—it defines the paths and navigation that the user of the product will take to find information or perform a task. If usability engineering is not applied at the beginning of interface design, the interface structure is where serious usability problems emerge. Because 80% of the usability of an interface is a function of its structure, a retrofit often amounts to a redevelopment of the entire presentation layer. That is why the best solution is to design the interface right the first time.

Avoiding Building Unnecessary Functions

Often, users evaluate software against a checklist of features, and companies feel compelled to include these features to be competitive. In fact, users may not need or want certain functions. Discovering this earlier—*before* the product is fully designed or coded—makes the user interface better because there are fewer functions to

manage and the interface can become cleaner. There is also a huge savings in development and maintenance costs. Unnecessary functions need not be designed, coded, tested, and maintained.

Expediting Decision Making

There is a great deal of research on how best to design interfaces. For example, it is well known that using all capital letters slows reading speed by 14–20% [Tinker 1965, 1963], that using three nouns in a row confuses people [Waite 1982], and that users expect to find the home button at the top left corner of webpages [Bernard 2002]. This means the development team need not spend hours second-guessing design decisions of this sort. Familiarity with these and other usability research principles saves development and testing time and contributes to development of a more usable product.

Increasing Sales

If you are developing a product for sale, a usable product will sell more units. If you are developing a website to sell a product or service, a usable site will sell more products and services. Usable products mean more sales. For example, an insurance company has a site that is currently feeding 10 leads per day to its insurance agents. The company could be feeding them 15 leads per day, but it is losing 5 leads per day because of usability problems. Visitors are dropping out because they can't figure out how to contact an agent or finish using the "insurance quote application" on the site. If usability became routine in this organization and those usability problems were fixed or prevented, how much would the company be able to increase its sales? The answer can be determined with a few simple calculations.

1. The company estimates it is losing at least 5 leads per day from usability problems, which is 1825 leads per year.
2. The company assumes that for every 5 leads received, it can get 1 customer. This means the company is losing 365 customers per year.

3. Each customer provides an average of $600 in income from premiums per year. This means the company could increase sales in the first year by $219,000 if did not lose the 5 leads per day.
4. Using an average customer retention time of 12 years, fixing the current usability problems could increase the company's sales during those 12 years by $2,628,000.

Avoiding "Reinventing the Wheel"

Good usability engineering, much like other engineering processes, means designing with reusable templates. There is no need to reinvent conventions for the design of menus, forms, wizards, and so on. This saves design time. Moreover, because it is easy to create reusable code around these templates, they save development and testing time as well.

Avoiding Disasters

Users are highly adaptable. Even when an interface is poorly designed, some users have enough motivation to keep trying to use the product, even if the application is remarkably complex and awkward. But sometimes a design is completely rejected. The people who are supposed to use the product may refuse to stick with it; they go back to their old ways of getting the task done, buy elsewhere, or just give up. These are usability and product disasters. It's best to get it right the first time.

For all these reasons, the 10% of the budget you should be spending on usability work is easily saved on every project, in addition to the benefit provided by the improved value of the end design. Even if you take into account only the typical savings from working with reusable templates, usability work pays for itself—it is really *free*. However, the decision to begin institutionalizing usability requires more than a simple calculation of benefits. The organization—and particularly the executives in the organization—need to understand how implementing usability means changing the way their business is done. For this realization to occur, a strong wake-up call is often required.

Usability within the Medical Industry

Dr. Ed Israelski, Program Manager, Human Factors, Abbott Laboratories

Usability or "human factors" are important to Abbott in two ways. First, the competitive landscape is such that more and more of our main competitors are putting an emphasis on their safe products by noting that they are also easy to use and learn. The second way involves the FDA and the safety regulations that Abbott must follow. If it were just the regulations, people could find loopholes; combine the regulatory requirements with the business case supporting human factors, however, and it's a good one–two punch.

Also, there are standards, such as the medical device standards, out there. An important organization called Association for the Advancement of Medical Instrumentation (AAMI, www.aami.org) develops standards and training courses for the medical device industry. One of the standards it has developed is a human factors standard. This process standard, which came out last year, is called "ANSI/AAMI HE 74:2001 Human Factors Design Process for Medical Devices." Now I can refer to the standard's human factors step and build it into the budget and product development schedule because it's a standard and the FDA will be looking for it. Then we can also show that it makes good business sense as well. We can show financial benefits because it saves money on training, produces fewer recalls, reduces liability exposure, and increases customers' satisfaction so they come back to buy more—all of which are important things.

If you institutionalize usability, you give people tools and methods and resources, including internal and external personnel. Then it's easy for people to do this—it's the path of least resistance. They don't feel they have to question it and make a business case each time they decide to put human factors process steps in the development project. So, if you institutionalize it, the decision-making process becomes more efficient.

Beyond Classic Usability

Around 2006, the usability field changed its name to the *user experience* field. The transition happened gradually, with groans from many of us. Our cards already read "Engineering Psychologist," "Human Performance Engineer," "Human Factors Specialist," "Software Ergonomist," "Human–Computer Interface Designer," and "Usability Specialist," to recount just a few titles. Printing another new set of cards sounded tedious. But the name change did, in fact, herald a new set of requirements and some new skills. We do not yet have much research on the value of these enhancements, but we are confident that they are of even greater value than the contribution made by the classic usability work.

Ecosystem Viewpoint

The foundation of classic usability work was a model of a person, interacting with a device, in a specific environment. That model was often simply a person in an office using a computer to do various tasks. We built a whole industry around optimizing that human–computer interaction. As early as the 1990s, however, that model started to fall apart. With graphical interfaces, interactions became so complex that we could not analyze all the tasks. Instead, we had to analyze a sample of tasks (which the industry has termed a *scenario* or, if involving only online activities, a *use case*). Since then, this model has also unraveled.

Today we have ubiquitous computing. Numerous devices (mobile devices, tablets, laptops, and desktops) are being used by many different people acting out various roles. These devices operate in diverse environments and employ a blizzard of artifacts. The field has been forced to adopt a set of methods modeled on the work of various ethnographers to handle this complexity. The ecosystem could be "everything that happens with a mobile device," "everything that happens in an x-ray room," or "everything involved in making a buying decision." We will see later in this chapter how this complex array of users, channels, and contexts plays out and pays off.

When we talk about user experience design, we are assuming an *ecosystem viewpoint* that allows us to consider movement through physical stores, mobile confirmations, and group decision making. With this perspective, the contribution of user experience design is far wider than it has ever been.

Strategy

If we don't have a good UX strategy, we are likely to build a *usable wrong thing*. Each siloed team builds a great offering. When all the features and points of entry are taken together, however, they are ineffective and confusing. Figure 1-1 is an example from a bank: imagine, as a customer, trying to work out whether you need to use telephone banking, speech-activated banking, mobile banking, or .mobi!

A good UX strategy will dictate the plan for how users will be motivated in the online environment. For example, if you are "the Asian

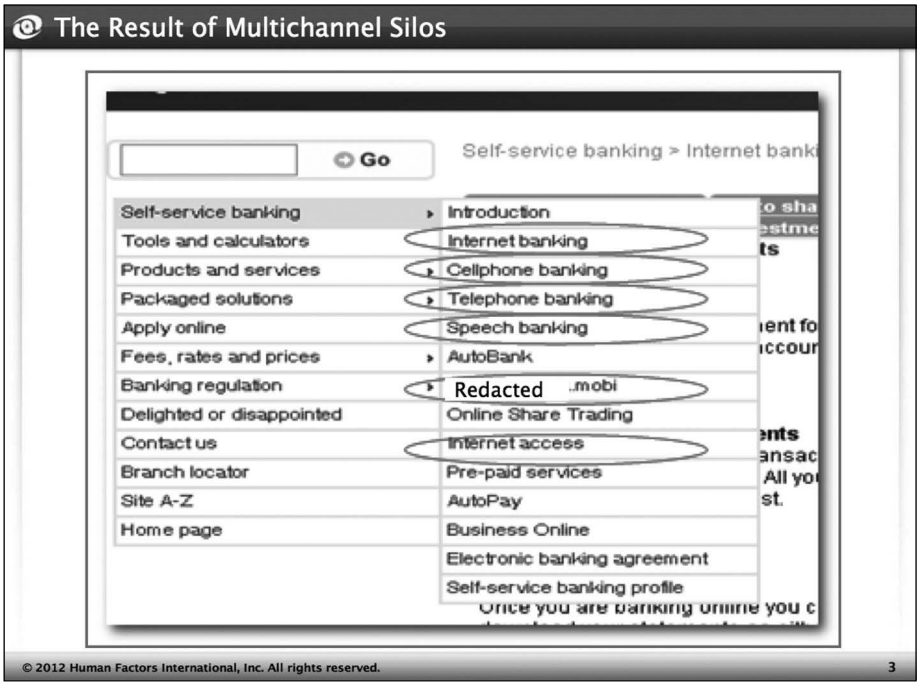

Figure 1-1: *The result of multichannel silos.*

Bank," what does that really mean in terms of your online designs? It is nice to say, "We are the Asian Bank"—but what do you do differently? In this situation, you will find that different parts of Asia need different designs. For example, Japanese people have a very low tolerance for ambiguity and risk, so the design needs to have lots of explanations, FAQs, help, and confirmations. Or suppose your organization wants to migrate mobile customers to digital self-service. It is a great idea, but just building a usable online facility probably won't make that shift happen. You need a scheme to pull people into a digital relationship. You might start with a small step, such as sending an alert for a low balance via SMS. Then you can gradually increase the online interaction (a method called compliance laddering). You might also appeal to a specific motivational theme as you move people into a digital relationship. Perhaps that theme could be the status of an account geared to the digital lifestyle. Perhaps it might be saving paper and being eco-friendly. Perhaps it might be the physical safety of paying bills online from the customer's home. In any case, we can never just hope that people will convert to the new system exactly the way we want them to; we have to plan a motivational strategy that compels them to migrate the new system.

Once you have a motivational plan, then you need to look at the way that the various channels fit together to meet your objectives in a coordinated way. This is the beginning of a journey toward cross-channel integration. The idea that "the user can do everything, everywhere, at any time" is very attractive, mostly because it is simple and has a certain rhythm. In reality, it is rarely the right answer. The ATM is not a great place to pay bills. Sure, you can do it. But people feel anxious at an ATM. Also, there is rarely enough room to lay out your bills, and the keyboard is not likely to be designed for bill payment tasks. Each channel has its own characteristics.

We need a simple story. If you can't tell the user where to go for which activities in a single breath, then you have a problem.

Once the overall design of the set of channels is in place (possibly with multiple Web properties and various mobile facilities), then it becomes possible to design the right facilities with proper

alignment. There is still a lot to do, of course. We need to use the same information architecture in all the channels ("pervasive information architecture"). That means we keep task sequences and content organization the same. We need standards to maintain interface design conventions. We might even try to avoid forcing customers to remember a half-dozen different passwords.

Innovation

New product and business ideas are often developed by technology groups or business experts. There is no question that each of these groups adds a valuable perspective, but their ideas often fail because of a missing "human element." Part of being a user experience designer is participating in a systematic, industrial-scale innovation process. There is an enormous difference between implementing a professional innovation process and asking people to be innovative. Certainly, you can ask people to be aware of opportunities that they see. You can mobilize staff and customers to contribute ideas. Nevertheless, even "crowdsourcing," while popular, is unlikely to provide truly innovative origination.

When user experience design staff get involved with innovation work, they don't just sit around trying to be creative or evaluating other people's ideas. Instead, they do research to build an ecosystem model that then serves as the foundation of the creative work. For example, when we worked for Intel developing the Classmate PC, we first studied the educational ecosystems of several emerging markets. We understood the roles of students, parents, teachers, and tutors. We modeled their environments and their activities. I think the product was so successful because the innovation and design work continuously referenced research on those ecosystems.

Innovation projects are generally large-scale operations. They take months and require a strong and specialized team. There is a flow of foundational research, ideation, concept selection, concept elaboration, assessment, and economic/feasibility analysis. While the user experience design team is critical to success, it is always best to have participants who specialize in both business and technology.

Persuasion Engineering

In 2003, Dr. Don Norman published the brilliant book *Emotional Design: Why We Love (or Hate) Everyday Things*. This book marked a real transition in the usability field. Certainly, many of us had been interested in the motivational aspect of software for years (c.f., E. Schaffer, "Predictors of Successful Arcade Machines," *Proceedings of the Human Factors Society*, 1981). The focus of the usability field was on making it possible for people to use their computers, however (Figure 1-2). When you run usability tests and find that perhaps 6% of customers are able to check out, you are not concerned about making the checkout procedure fun—you just want it to work. But Don got the timing right. By the turn of the millennium, we were, fairly routinely, able to create software that people were able to use. It then became possible to turn to issues beyond basic

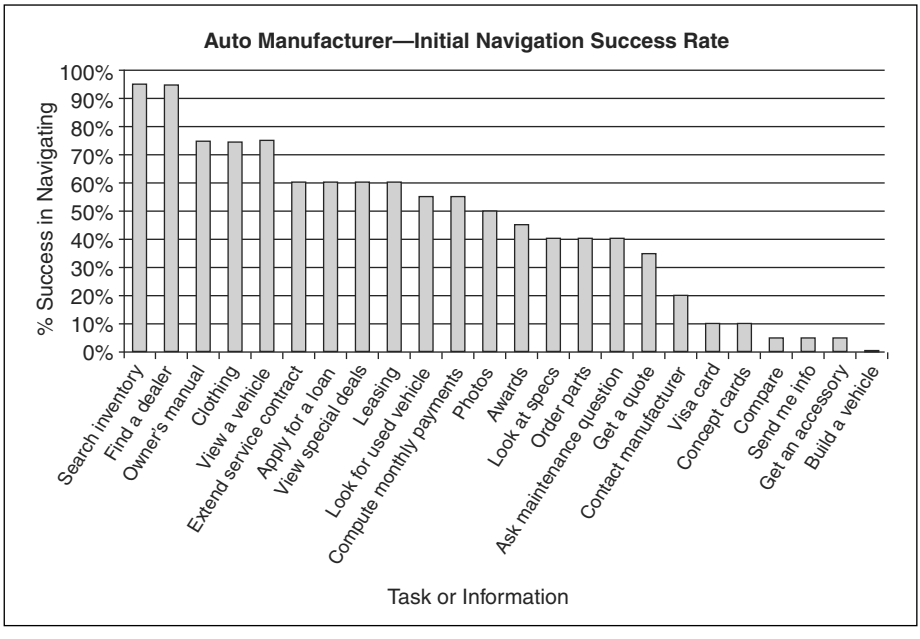

Figure 1-2: *Chart of findings from a car manufacturer's website. Only one-third of the users could get a quote.*[1]

1. Data taken from an HFI usability test of a major auto manufacturer's website, completed in 2002.

usability. That is why I say that basic usability ("I can do") is a hygiene factor. You pretty much have to get that right to even be in business.

In *Emotional Design*, Don talked about designing things that people love to use. This is a fascinating area that is certainly among the capabilities of a user experience designer. But it is generally not his or her main focus. The real question is, "Will people convert?" For most organizations, it is a plus if people love their designs, but it is making the sale that makes the company executives happy.

Conversion is partly about making things that people like, but it goes far beyond that. There is a whole world of *persuasion engineering* that determines whether people will buy the product, use the software, ask their doctor, vote for a candidate, tell their friends, migrate to a digital self-service channel, or otherwise do what the organization wants them to do. To reach this point, we have to go beyond "Can do" to "Will do." "Can do" is a hygiene factor—you really have to make it usable. But persuasion engineering is the key differentiator. Only advanced user experience design practitioners are good at it. Persuasion engineering is not magic: *PET* ("persuasion, emotion, and trust"), as we call this field at HFI, is based just as much on a scientific approach as human–computer interface design work. Research-based models on how to motivate customers have been developed, and there are so many ways to influence customers that I've felt the need for HFI to restrict the kinds of companies we work for. The methods of influence are just that powerful.

CEO Wants a Great Customer Experience: Now Don't Fall for UX Fads or Half-measures

The first edition of this book included a long section on how train wrecks were needed to alert executives to the need for good user experience design. I tossed it out. Today's executives are very much aware of the need for good customer experiences. Indeed, they often get very excited about it. But then what do they do? They usually go through a somewhat predictable set of attempts to move their

organization toward effective user experience design. Let's go through some of the more common pitfalls.

Relying on Good Intentions

Many top executives start with this approach because it is attractive, not to mention cheap. It seems logical to think you can tell staff members to "Put the customer first" or "Be customer-centered," and then expect them to just be able to do it. The problem is that they can't "just do it."

Creating usable designs takes far more than good intentions. Today, everyone in the development field wants good usability, but usability is hard to achieve. The proof for this statement is painfully apparent in the awful designs that are so commonplace. Even highly motivated professionals often create usability disasters.

Simply motivating people won't result in good user experience design. In some cases, a manager taking this path needs to see a whole project built under his or her well-intentioned motivation, only to find that UX has not been greatly improved.

While the manager reviewing the designs may immediately see that the designs are unintelligible, it takes a serious application of usability engineering technology and methods to ensure that an organization's program will be successful.

Relying on Testing

Sometimes companies get the idea that all they need to create a good user experience is usability testing. It is good to be able to test, but testing alone is not enough. Testing pinpoints problems in the design and its usability that can be fixed. But to be successful and to institutionalize user experience design, companies need a complete methodology including concept development, data gathering, structural design, design standards, and so on. While testing is important, by itself it's not a long-term solution.

Relying on Training

It makes sense. You have smart people who know the domain and technology, so you think you can just give them some training in

Being an Advocate for the Process

Dana Griffith, CUA, Web Consultant—Interactive Media, American Electric Power

One of the principles I have gained from usability training is that you should never become the advocate for the user. I thought that was really interesting because at the time I was sitting there during the session and thinking, "Of course I'm supposed to be the advocate for the user." But the idea presented was that, once you become the advocate for the user, people try to go around you. They just really don't want to stop what they are doing and change things. But if you simply become an advocate for the *technology* or the *process* and let people decide what they're going to do with that, you will have better success.

Becoming an advocate for the process can have very practical applications. Perhaps we're looking at a very simple application on a website (a form, for example), and someone wants to know whether one area should be populated already or whether it should drop down with selections. In this type of scenario, I can say to the people involved in that project, "I can test that for you tomorrow and find out."

usability, and things will be fine. If you pick a good program, training will help, and the staff will learn a good set of basic skills.

The key word here is *basic.* You will probably give people 3 to 10 days of training. In this time frame, they are not about to become doctors of user interface design. Instead, they will be paramedics. The trained staff members will see the problems clearly. As a result, they will create better designs, but they will still feel frustrated. The corporate culture won't have changed enough to value UX, and there will be no plan for user experience design in the corporate system development life cycle. There will be no design standards. Organizational channels won't be provided for testing with users. There will be no one to call with questions and no repository of

examples and templates. The staff members will know when something isn't quite right, but they probably won't know how to fix it.

Relying on Repair Jobs

Repair jobs try to fix user experience design problems at the last minute. This is inefficient and creates only limited potential for improvement. Ideally, UX work should start when requirements are defined. If you bring UX engineering into the process late, you can improve small pieces of the design, such as the wording, layout, color, graphics, and control selection, but there will be no time for more profound changes such as standardizing user interface elements, the flow of logic, or other major elements.

Relying on Projects by Ad Agencies

Another common response to addressing UX concerns is to bring in the advertising agency with which the organization already works. Unfortunately, ad agencies currently have few real UX specialists on their staffs. While the agency will be able to help with branding and perception issues, advertising is a different skill set than user experience design work. There is some overlap, in that both advertising and UX staff members are focused on the customer, but the goals of the ad agency and the goals of the UX team are not always the same. The methods and processes each group uses to complete its work are also very different. Moreover, bringing in an ad agency will not spread user experience design throughout the organization, and it may not delve deeply enough into navigation structures to improve task usability on even a single project. Usability focuses on whether users can perform certain tasks with the technology product. Advertising concentrates on capturing and focusing attention, communicating brand information, and influencing behavior. Advertising and usability efforts should work hand in hand, but they are not the same.

Hiring UX Consultants

A common response to a wake-up call is to hire a consultant to review a site or application. This might be a good starting point and

will probably help with a particular project, but it won't address the problems of the next application or website. That is, bringing in a consultant on one project will not disseminate usability engineering throughout the organization.

These consultants can be expected to do a good job and can be cost-effective. However, hiring consultants still leaves the client company without internal capabilities. The company may see the value of the good design work, but it will have to call the UX team back for each new project.

Some user experience design consultants try to transfer knowledge to the client organization. Following this practice does help company staff see that good UX practice makes a difference. Realistically, though, without training, standards, and tools, this approach leaves little behind that is useful over the long term.

Hiring New UX Staff

With a clear understanding of the competitive value of user experience design work, managers sometimes make the substantial commitment of hiring UX staff. This is laudable but, unfortunately, it often fails. The manager may not be able to find or screen for experienced UX specialists. Some people looking for work in usability believe that experience on one project that involved UX qualifies them to be a user experience design specialist. In reality, becoming an effective UX practitioner takes an educational foundation (e.g., cognitive psychology), specific training in usability work (e.g., expert review, structural design), and a period of mentoring by a seasoned expert. After attaining a master's degree in the field, it generally takes three to five years of mentored experience before totally independent work is advisable.

It is all too easy to hire people who need a lot more experience, training, and mentoring before they will be effective. Hiring one such staff member is time-consuming enough—you don't want to end up with an entire usability group whose members are immature or inexperienced.

Typically, a manager hires one or two people to start. Even if the new hires are experienced, having only one or two people often

means that the "group" is quickly besieged and rendered ineffective. The team members may soon be so busy that they can't get design standards in place and may not have enough resources to provide training.

In these types of situations, it is best to have many of the initial activities completed by outside consultants who have an established team that has specialized skills in training and standards development and can work quickly and successfully. The consultants will be seen as outsiders, and employees may be more willing to have an outsider dissect the flaws in their designs. Outsiders can say things that an insider has left unsaid. The consultants will be there to get the internal UX staff headed in the right direction and can hand over their knowledge and expertise to help the internal staff become established and ready to take on projects on their own.

If you install a user experience design team, your efforts should include more than simply hiring the people to staff it. Making the team members effective means putting them in a position to be an integral and harmonious part of the organization, establishing clear roles and authority, and addressing the integration of the usability team with the other parts of the workforce.

Seeing the Real Numbers Creates a Call to Action, Too

Harley Manning, Research Director, Forrester Research

Let's say you do care about usability—the organizations we surveyed don't have a formal process for evaluating the usability of the packaged applications when they come in. They're rarely looking at the cost of ownership with regard to usability—and even if they do care about it, they don't know how to evaluate it.

Knowing that in theory it costs me money to have poor usability and being able to actually evaluate how poor the usability is and put a number on it—that's the huge gap. Once you do that and start looking at what the real numbers are, then you say, "I must do something about this!" But that's what the organizations we surveyed haven't done yet.

Who Can Be a Champion?

In discussions of executive championship, there is often an eager volunteer. This person will meet the criterion of being passionate about user experience design. This person will want the job. But this person is likely to be a great candidate for the position of UX Director. The executive champion must truly be a senior executive in the organization.

One criterion that seems to work is that the champion must influence the entire budget across the target design areas. Looking at the need for user experience design across an organization can be a bit overwhelming. There are needs on the public website(s). The call center has issues. Software products have issues. The intranet and back-office operations have issues. User experience design seems to be needed everywhere. If the champion is going to be really effective, he or she needs to have an overarching role across everything. This might seem to be a clear call for championship by the CEO. In fact, while CEO support is very useful, CEOs usually don't make great champions. The CEO will not have sufficient time and attention to spend on the job of executive champion. Instead, this role should usually be filled by someone just a bit lower in the organization. It is a real challenge to find a champion who will have time to really do the job well and at the same time covers a large enough area of the organization.

In the evolution of institutionalization, it is often the case that we start in one area of the business and then expand to the full organization. Certainly, there will eventually be a need for a single, central organization that supports the user experience design effort—otherwise, things will become fragmented and ineffective. But it is better to have a serious executive champion in a key area and focus on that area than to be spread thin and have spotty support.

The Role of the Executive Champion

The executive champion might be the most challenging role in the entire institutionalization effort. There will probably be no formal

position and authority, and the organization may not have even begun the process of sensitization and assimilation. Yet the executive champion must gather resources, create a strategy, and keep the process moving. He or she must manage points of contention and chart the course to full acceptance.

Without a champion, the usability staff often has a hard time being included as part of a cohesive strategic effort. The presence of an effective executive champion is the best predictor of success for a UX institutionalization effort. Without a usability champion, the usability group does not have access to key players in the organization, and it is nearly impossible for them to effect change within the organization. With an executive champion, however, the group has a chance to create change and attain the visibility needed to succeed.

The executive champion doesn't need a background in usability engineering or software development, but he or she does need to understand the value of user experience design, its proper applications, and the importance of an implementation strategy. It is possible to get a sufficient foundation in usability engineering from a short course and some reading. First and foremost, though, the champion must have a clear understanding of the business imperatives of the organization and must see how UX work supports these objectives. He or she must understand the core value of user experience design in the organization and repeatedly reinforce this focus, with examples showing how UX design will reduce call time or increase sales.

The champion keeps the whole effort focused on the business goal. This guidance is the differentiator between an effective executive champion and an ineffective one. Ineffective champions say, "We need user experience design." That is nice, but the reality is that *no business ever needs UX for the sake of UX.* Effective executive champions say, "We need to sell more, get fewer returns, and reduce support costs." They know the specific things their business needs. They say this over and over, thousands of times. The business focus of the usability effort is their mantra—and it works.

The executive champion needs to be able to effectively influence the key people in the organization's power structure. This means

arranging for project funding as well as convincing key people in an organization whose approval and support are necessary for the institutionalization program to succeed. The executive champion needs to employ the approach that works best with each person—understanding individuals' hot buttons and learning styles.

The executive champion must guide the UX staff through the project approval and selling process. The champion needs to check for acceptance and detect areas of resistance at all levels of the organization. The executive champion is the key agent of change and, therefore, must be able to network with key people in the company, detect areas of resistance before resistance emerges, remove organizational obstacles as they arise, and work continuously to promote acceptance. These skills are essential.

The executive champion must be responsible for the institutionalization strategy, no matter whether the practice is new or seasoned. There must always be a written strategy that directs how that operation will be maintained and enhanced. This means ensuring that the capability-building activities are aligned and that they progress. It also means identifying how the required usability work is to be staged and ensuring the proper allocation of responsibilities and resources. A good strategy is critically important (see Chapter 5), but beyond the content of the strategy, the champion must monitor progress and demand results. Progress takes place when an executive regularly asks for updates and checks milestones, keeping staff members on task. The executive champion cannot create a strategy and forget it. He or she must firmly ensure that the team carries out the strategy.

Keep Moving on the Strategy, Keep Expanding and Innovating

To be successful, executive champions cannot just avert problems and maintain the user experience design operation. Instead, they must find new methods, create new ways of working, and make new markets and business models. If they do not engage in innovation, they are caretakers, rather than executives.

Why Support from Senior Management Is Crucial

Harley Manning, Research Director, Forrester Research

The person at the top of the organization must believe that user experience is important and must require people to follow good practices. Unless that person is committed to this idea, good usability is not going to happen.

The companies that really get it tend to have C-level people who care deeply, like Charles Schwab. Charles Schwab himself, the guy who runs the company, uses the site every day. The woman who headed up the site design came to a workshop I ran a few years ago. She said that Schwab called down on a pretty much daily basis. Certainly, she didn't go a week without hearing directly from him about some problem that he or his mother or his friend had with the site or about something he thought could be better. So this guy is very engaged, very demanding. And the site works as well as it does because, from the top down, it's critically important that the site deliver a great user experience.

We come back to this time and again—the executives must understand the importance of the user experience to the business. Because no executives will put up their hands and say, "Let's do something that's bad for business" or "Let's do something that hurts our customers"—they won't do that on purpose. When they do those things, they do them out of ignorance.

You don't get widespread attention to user experience unless its importance is understood at the top. That's where the leverage is.

The executive helps to expand user experience design throughout the organization. Creating usable software can be essential to many different groups in the organization, or it may be the only way to keep up with the competition. Usability can save millions of dollars when there are large numbers of internal users. For example, the usability team at Sun Microsystems estimated that poor design of

the company intranet cost the average employee 6 minutes per day, for a total of $10 million in lost time per year [Ward 2001]. A single second removed from the average call-handling time can be worth $50,000 per year or more in large call centers. With an application that has a large number of users, even benefits from small improvements can add up fast (Figures 1-3 and 1-4). It is no accident that the term "usability" is commonly discussed in executive suites now. Once the executive champion determines the specific value of usability to the organization, he or she must spread the word and keep people focused on the goal.

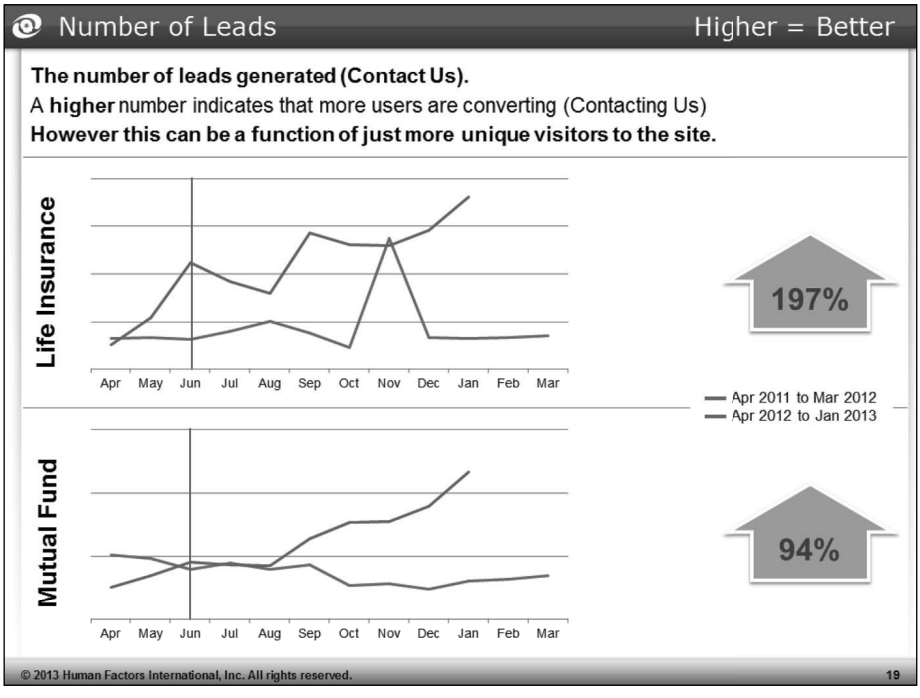

Figure 1-3: *Chart showing increased lead generation from a mutual fund and an insurance site reworked by an HFI user experience design team.*

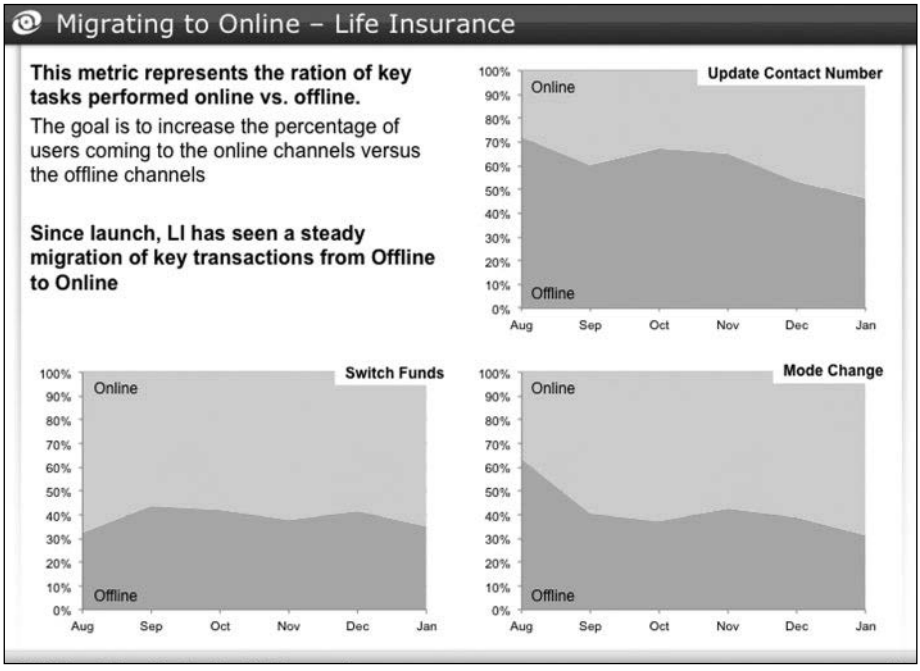

Figure 1-4: *Chart showing customers shifting from expensive human-intermediated channels to online self-service from an insurance site reworked by an HFI user experience design team.*

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