“Easy to use.” It sounds so self-evident. Yet ever since computers have existed, there have been debates about what makes an application or an interface user-friendly. Just about the only thing everyone agrees on is that most of the tools out there are not designed well. The Web only complicates matters, because it’s not obvious whether a Web page is a software application, print by other means or something entirely new.

There’s a simple solution: Usability is in the eye of the user. A good online interface is one that promotes a good user or customer experience... and that leads to more activity, more transactions and more brand loyalty. Without rigorous methods for understanding user experience and incorporating that knowledge, however, it’s easy to make incorrect assumptions. Effective tools to measure and enhance online usability are now available. In the current business climate, those who ignore user experience do so at their own peril.

We would be too optimistic if we said the Net is becoming significantly more usable. For every site that learns from its errors, ten new ones spring up to repeat its initial mistakes. However, more attention is being paid to usability and customer satisfaction than ever before, and for good reason.

The math is simple. Empirical human-factors research (see page 6) shows that each additional click to complete a task typically reduces the completion rate by 50 percent. And acquiring a new customer generally costs five times more than servicing an existing one. Poor usability, which makes users less likely to transact or to come back, thus has direct repercussions for the bottom line.
Despite this, most major Websites still have significant usability problems. For the 2000 holiday season, user-experience consultants Creative Good (see page 12) ran a test with over 50 consumers on eight leading online retail sites. Forty-three percent of the purchasing attempts ended in failure, because the users literally couldn’t figure out how to complete the transaction. Whether or not you believe the specific number, every abandoned transaction is revenue lost. How many people walk out of a supermarket or bookstore because they can’t figure out how to buy something?

Usability has never been more important than it is in today’s market environment. “You could get away with Websites that didn’t connect with users at all so long as your business plan was to con investors,” quips Jakob Nielsen of Nielsen Norman Group (see page 14). Andre Schwager, CEO of customer-survey provider SatMetrix (see page 11), elaborates: “In many cases [the pure-play Internet startups] did not bother with the experience of the customer. They were only concerned with how much product they could push out.” As markets demand profitability, Internet-based companies now must show that they can generate revenues from customers, not just from venture capitalists and hapless shareholders.

Sites have historically used many techniques to improve conversion ratios, shopping-cart abandonment rates and other metrics. Some of these, such as personalization (see Release 1.0, September 1998), have ancillary benefits. None of them, though, is a magic bullet. From Java through broadband, Web developers have continued to dream of a technological quick fix. Yet most quantitative measures of site performance only scratch the surface, because they don’t take human users into account. “I’m astonished by the number of people who believe it’s a sheer performance/download issue,” says Troba CEO Elizabeth Charnock (see page 6).

In reality, there is no substitute for looking carefully at user experience. (Note: we’ll generally use the terms user and customer interchangeably.) When Move.com improved its “contact an agent” feature based on a review by survey firm Vividence (see page 8), it saw a 150% increase in lead generation. Many others have seen similar improvements from seemingly simple usability changes.
What Makes a Good User Experience?

If good usability were obvious, more sites would be better designed. There are established principles that every developer should take into account, just as there are rules of good grammar and style in writing. Once you get beyond the basics, though, usability becomes a surprisingly deep subject.

For example, familiarity is important. Interfaces that aren’t the simplest may in practice be easy to use because users have seen them enough times before. An interface that works for a speed-obsessed power user may fall down for a newbie, and vice-versa. A great set of community tools may be wasted if users are primarily looking for official information, or vice versa. And how do you determine whether something is effective? Looking at how well a product or Website is doing puts the question backwards — the success may occur either because of or in spite of the interface.

Usability is a cross-cutting discipline, or really a collection of different disciplines such as psychology, human factors, behavioral science, statistics, information architecture, anthropology, graphic design and market research. People use the same words to mean different things. Some view the task as a qualitative exercise of strategic analysis, while others see a landscape of quantitative metrics. Still, there are common themes that emerge. The central element of usability is not look-and-feel; it’s behavior. What matters is how a site behaves or interacts with data, and how users behave in response to the site. Beautiful design may sell iMacs or Palm VVs, but for any interactive system, the user’s voice matters most. That doesn’t mean all Websites must be drab and identical. Visual appeal remains important, but as a means to an end. Real users, not design competitions, are the ultimate judges of what works.

On some level this is yet another example of the Net’s democratizing force. The fact that anyone can create a Website means many shockingly bad sites will enter the world, just as desktop publishing produced piles of hideous documents. Yet it also means that those who want to build effective sites have the tools for doing so always in front of them. A Website is never finished, because it can always be tweaked and updated to better serve its intended goals. Every online user interaction is a form of communication, and those communications can be mined for useful information using either implicit or explicit techniques.

“IT doesn’t make a lot of sense to make major decisions based on theory or intuition,” says Nirav Tolia, ceo of user-driven recommendation site Epinions. He continues: “It’s easy to test. The great thing about the web is that it’s an incredibly
feedback-rich environment.” As we describe below, there are several ways to gather that feedback, including surveys and usability labs. The key is to accept the importance of user experience, and to build it into a company’s processes.

The metaphor conundrum
The classic challenge of any usability exercise is to choose the proper metaphor. As we and others have observed (see RELEASE 1.0, APRIL 1997), the Internet lends itself to a variety of metaphors, which are often inconsistent. You have different expectations in a library, a shopping mall and a movie theatre, but it’s easy enough to look at the Web as all three of those things (and many more).

Linear extrapolation from metaphors generally fails – witness the various expensive efforts by major media companies to shovel magazine content and design structures onto the Web unchanged. At best, this approach creates something useful but far below the Web’s potential. Amazon.com does all the things a physical bookstore does, but the company’s genius was to realize that it could – and should – do many things bookstores do not... such as offer user reviews, collaborative recommendation engines, sales rankings and hyperlinks to related products.

Yet metaphors are essential. The Net is not sui generis. Users and designers bring to it their expectations and experiences. Metaphors are a fundamental cognitive mechanism for dealing with uncertain and unfamiliar situations. There’s no way around them; the question is how to pick the right metaphors, and how to realize where the metaphor stops and the extensions (or another metaphor) begin.

In this context, it’s important to take a dynamic approach. Events online are always part of contexts or flows of user activity, and expectations about the next step depend heavily on the contours of those flows. “You have to think of the design process as a narrative,” says Epinion’s Tolia. “Users come in and they have a need, and they have to use various pieces of functionality to meet that need.”

For example, Epinions realized through usability testing that virtually all of its users read several opinions about a product in each session. After reading a positive opinion, users often wanted to compare it to a negative review of the same product. Epinions therefore added such links on every opinion page, so that users don’t have to go back to a higher-level menu. Like many usability enhancements, the change seems obvious in hindsight, but the rationale only became apparent after testing.
Usability Analysis

What do users want?
There are basically three ways to create user interfaces. The first is for the designer to make a judgment about what users want and go from there. In fact, this is how most design projects work. Although designers (or consultants) may have a good feeling for what users want, in most cases the interests of those using the site differ from those of the people creating it. The same problem crops up often in software design: Programmers are by nature technically oriented and comfortable with computers, while many software users are not. A geek will always have a hard time intuiting what a user expects and finds comfortable. Business dynamics only reinforce this tendency to over-emphasize the designer’s own world-view: “Only a very experienced and self-assured executive will say, ‘don’t design for me,’” explains Nielsen.

A better solution is to talk to real live users. But here the road forks. One way to gather data from users is through surveys or focus groups, which solicit user feedback about their experiences. The other method is to simulate the experience itself and observe users (live or on videotape) as they try the “dog food.” Surveys have the benefit of being cheaper and often faster, because they can rely on automated techniques. Observation requires real users coming to participate in a study, with real observers watching them and probing their actions. (Of course, Web users can also be monitored remotely, but watching their actions and emotions in person provides the most information.)

Nielsen, perhaps the best-known online usability expert, comes down strongly on the side of observation. “If you just ask people [why they do something] they are going to make up a story,” he says. “You’ve got to observe them in the moment, not ask them two weeks later.” For interactive design (i.e. anything with a user interface), Nielsen argues, you have to observe the interactions themselves. Careful observation is the best way to get below the surface to users’ real concerns.

The downside of this approach is time and expense. And if the sample size isn’t large enough or the usability consultant doesn’t pose the right questions, the analysis may miss something. To the extent that usability is a science instead of an art, it should be possible to distill down a set of rules that can be applied in an automated fashion. That’s the approach taken by Troba.
Troba: automated usability analysis

Troba’s approach to usability is based on the discipline of human factors or human-computer interaction. Human-factors research seeks to understand how humans interact with technology, often through detailed quantitative studies of user behavior. Troba co-founder and CEO Elizabeth Charnock spent more than a decade doing human-factors analysis and managing engineering projects at technology companies such as Hewlett-Packard and Sun. By translating user activities into objective metrics, Charnock argues, it’s possible to identify the situation or even the “mood state” of customers by remotely monitoring their behavior on a Website. “We can tell you when customers are becoming confused,” she says. “We can show them scratching their heads on the screen.”

Troba’s offering, Barcelona, is a subscription service that includes a variety of components for enhancing usability of transaction-oriented sites. The software identifies traditional user-interface problems in the design of a site, such as excessive numbers of steps to complete a task or color palettes inappropriate for color-blind users. It also produces statistical reports on user behavior from logfile or clickstream data. Some of these static checks are fairly sophisticated, including linguistic analysis of hyperlink text to flag misleading wording. But the core of the service is in dynamic analysis of user activity.

Troba first builds a task model for each site, based on common user goals and the steps involved in reaching them. As noted above (see page 4), users see sites in terms of activities and objectives rather than viewing pages in isolation. One step, such as browsing through product listings before making a selection, may involve many pages, or vice versa. The customer assigns a completion value to each step and identifies related tasks. From this, Troba creates algorithms that map individual user actions onto the site’s overall business goals and metrics.

The model is then fed data from logfiles or small executable observer agents that load with the site’s Web pages. The agents allow Troba to identify when users hit the “back” or “forward” button (which doesn’t show up in logfiles because pages are usually served from the local browser cache) and to uniquely identify users behind proxy servers. Clients can optionally deploy more-powerful agents that detect additional behaviors such as rollovers and scrolling.

By identifying a user’s mood state at a given point in a session, Troba can flag problems or can target information displayed based on its mathematical behavior model.
Charnock dismisses most focus groups and usability studies as unnecessary because different user experiences produce statistically different activity patterns, which automated software can identify and respond to. “Our focus group is your actual customers,” she explains.

Designers tend to make the same mistakes over and over again, Charnock points out, so software can make a big difference simply by spotting common usability errors. For example, one Troba customer had a search box on the right side of a page, outside the user’s normal field of view. Moving it to the left, as most sites do, resulted in a thirteen-fold increase in the number of people using the search function. Because Troba’s service is offered under a hosted model, the company can continuously add new analyzers to check for additional common problems. And because Troba assigns dollar values to elements of its task model, it can tie its usability recommendations directly to business metrics.

The company is focusing on acquiring customers with a substantial brick-and-mortar presence, because it feels they are most likely to understand the value of its approach. Current clients include McKesson HBOC, CMP, Virgin Wine and Joann Fabrics. Pricing ranges from $25,000 to the high six figures per year, based on the size of the site.
Surveys

Surveys can be an effective mechanism for improving Website usability (see Release 1.0, September 1998). The Net's ability to connect customers and businesses without regard to geography also makes it far easier to ask those customers what they think, and to tie those responses to usage patterns.

There are many ways to do a survey. In most cases, surveying actual customers will be the most useful – after all, they are the ones you're trying to satisfy. Then again, it may be difficult or expensive to assemble enough of them and to segment them effectively, not to mention the possibility that an extended survey will itself annoy or frustrate the customers. How the survey questions are posed, and the framework used to analyze the results, are also important differentiators.

The three companies below all use online surveys as the basis for customer-experience analysis, but beyond that, their methodologies differ in important respects.

Vividence: have panel, will survey

“We help you improve your business by letting your customers guide you,” explains Vividence CEO Artie Wu. Wu came up with the idea for Vividence in 1996 while working at Infoseek, when he was asked as a special project to research why users seemed to prefer competitor Yahoo! He realized there wasn't any systematic way to answer the question, nor was there any service provider focused on quantitative analysis of Website usability. Market research surveys were too general, usability studies were expensive and involved a small sample size, and logfiles or clickstream data didn't indicate what users were actually thinking. Confident other companies had similar needs, he kept the idea in mind when he left Infoseek for Andromedia, and eventually founded Vividence in late 1998.

Vividence has assembled a panel of 150,000 people who can be called upon to review client Websites. Panel participants fill out detailed demographic surveys so that Vividence can target evaluations to a specific kind of customer. Each of them runs Vividence software that automatically tracks their activities when browsing a site and solicits their opinions on various aspects of the experience. The company uses the quantitative data as the basis for usability reports and analysis it provides to the client. For non-consumer sites such as those for health care professionals, Vividence can recruit pri-

VIVIDENCE INFO

Headquarters: San Mateo, CA
Founded: 1998
Employees: 180
Funding: $58 million from investors including Kleiner Perkins, Sequoia, Partech, Accenture Technology Ventures, Angel Investors and J.W. Seligman
URL: www.vividence.com
vate panels. The company, which launched in early 2000, now has more than 160 customers, about a third of which are Fortune 1000 enterprises.

Vividence's approach balances the speed and cost-effectiveness of automated solutions with the insight gained by surveying actual humans. Clients can pose a specific question or identify a particular area of concern, rather than having to start with raw data and look for patterns to emerge. For example, in a B2B auction context, a client could ask whether participants really understood the bidding rules and the binding nature of their bids. With Vividence, clients can see both what panel members say and what they actually do. This is important because good customer experience depends heavily on users' expectations going in, which are highly contextual.

Wu distinguishes usability, which he defines as the ease of completing a task, from the larger concept of customer experience. Customer experience encompasses whether the user would go back to the site again, recommend it to friends, and so forth. A very usable site may still not create a successful experience if customers don't find what they expect. "No matter how well you know the customers, their mental models and the processes they expect to go through differ based on factors such as what they are trying to buy," says Wu.

One Vividence customer, a high-end jewelry retailer, wanted to cut down on shopping cart abandonment by male customers. Vividence's surveys found that many of these customers would put an expensive item in a shopping cart after configuring it extensively, then would leave the site for several days as they convinced themselves they were making the right decision. Because the site was set to expire shopping carts after a period of days, the customers frequently found their items were no longer saved when they returned, leading them to give up on the transaction.

With the Internet now beyond its overheated phase and profitability suddenly important, companies are shifting their focus from acquiring new customers to retaining and satisfying their current ones. This makes understanding those customers and enhancing their experience even more important. Wu says Vividence customers are starting to incorporate its analysis into their regular operations such as customer service escalation, in addition to using it for redesigns or to address specific areas of concern.
**IPerceptions: finding a common language**

IPerceptions grew out of Capability Snapshot, Inc. (CSI), a Canadian strategy-consulting firm that since 1993 has developed a methodology to measure organizational capabilities. CSI took its model for understanding stakeholder perceptions about organizations and adapted it to measure user views about Website effectiveness. IPerceptions was spun off as an independent company last summer. (Disclosure: Edventure Holdings President & CEO Daphne Kis is a Director of IPerceptions.)

IPerceptions' model analyzes sites based on five dimensions: motivation, communication, navigation, information and customization. The methodology encompasses both ease-of-use and the broader question of how users relate to the site and the company. For each client, IPerceptions custom-designs surveys using a proprietary expert system that selects questions measuring each of these elements. The client can select up to six attributes in each of the five categories that are most important for its strategic objectives. The result is 30 "closed" questions that users answer by ranking on a scale of one to 10.

A typical survey also gives users the opportunity for open-ended feedback. Those responses are analyzed using algorithms that count frequencies of letters and words, bringing common responses to the top of the resulting report so they can be given a higher priority. IPerceptions collects demographic and psychographic data on survey participants, then uses both open and closed responses to develop profiles of a site's user groups.

The benefit of the model-based approach, according to IPerceptions, is that it produces common baseline measures. The baselines are useful for analyzing both the value of a Website to its users and the site's effectiveness for the organization that created it. "The model is critical because it provides something people can talk to," says CEO Jerry Tarasofsky. "It's a common language." For example, marketing and technical departments in a company may have different goals for a Website. They need a uniform way to describe the company's strategic goals and to understand how well the Website achieves them. And because IPerceptions is signing up different companies in the same vertical, it is developing industry benchmarks so that companies can compare themselves to their competitors.

IPerceptions' software allows survey questions to pop up without reloading the page or scrolling, speeding up the survey and thereby increasing the response rate without
compromising the richness of the data. IPerceptions says 97 percent of those who start the survey answer all the questions, including the profiling information.

Because it surveys the actual individuals who come to a Website for a purpose, rather than a generic pool of test subjects, IPerceptions can help companies understand who their users are, why they are coming, the experience they have and what would improve their experience. A major fast-food operator, for example, designed its site for its usual customer demographic, under the assumption that most visitors would be interested in finding nearby locations or purchasing promotional merchandise. Instead, the online demographic was much older and split into two camps. Men were primarily interested in using the Website to complain about bad experiences they had had or to offer suggestions, while women often looked for nutritional information about the company’s food.

SatMetrix Systems, formerly CustomerCast, has been in the customer experience measurement business for four years. Its focus — real-time collection, analysis and reporting of customer satisfaction data — differs somewhat from the Website usability companies we profile elsewhere in this issue, but the impetus is the same: Companies that understand and satisfy their customers will be more successful.

“Customer satisfaction is the new currency for 2001 and beyond,” says CEO Andre Schwager, a veteran of HP and Seagate Enterprise Management Software. Based on well-established data about the connection between customer satisfaction and profitability, companies are increasingly measuring and rewarding employees based on customer satisfaction scores. Among the most aggressive is sales-force automation vendor Siebel, which recently became a Satmetrix reseller and investor.

Schwager also points to eBay as an example of how customer satisfaction can be incorporated into a company’s DNA. eBay receives 500,000 customer emails per month, and has over 1200 customer-support employees. Satmetrix is integrated with eBay’s Kana email management system (SEE RELEASE 1.0, MARCH 1998), so that every resolved case automatically generates a short survey request to the customer. Managers meet regularly with customer-service reps to review the scores from these surveys, and hand out bonuses or assign additional training based on the results.

Though customer surveys have been around for a long time, the ability to use the Net to generate continuous, real-time data, and to translate that data into actionable recommendations, is something new. “It’s not just measuring, it’s really taking action,” says Schwager. The SatMetrix software distills results down to standardized satisfaction ratings and identifies specific areas of concern. It also allows relevant portions of the data to be shared with all employees, so they can take customer feedback into account on a continuous basis.

SatMetrix, based in Mountain View, CA, has grown steadily and now has 92 employees. Ten of the Fortune 100, and over 90 companies in all, use Satmetrix surveys, including HP, Lucent, Cable & Wireless, Dean & DeLuca and eBay. By building up within verticals such as technology, pharmaceuticals, telecommunications, insurance and financial services, SatMetrix hopes to generate industry-wide benchmarks. It is also working to tie the customer-satisfaction numbers more closely to financial performance of its customers.
IPerceptions has signed over 20 organizations to use its services and is now looking for its second round of financing. The company is developing strategic alliances with interactive agencies, consulting and market research firms (such as Wirthlin International) that can integrate IPerceptions' technology into their client offerings.

The Consultants

Most firms that develop Websites have usability or customer-experience groups. This includes both traditional “Big 5" systems integrators and newer "I-Builders" such as Scient, Viant, iXL and Agency.com. The software tools we have discussed for evaluating Websites or conducting surveys are making their way into the consultants' arsenal. Such arrangements provide excellent channels for the software vendors and also help the consultant generate additional work. ("Look, customers are saying you need to add this feature, and we can do it for you . . .")

Then again, as Creative Good founder Mark Hurst points out, “there's an obvious conflict of interest when the company that builds the site is then asked to point out the problems in its own work.” Standalone usability consultants such as Creative Good and Nielsen Norman Group help companies sharpen their focus on customer experience, but leave the development work to others. We discuss both firms below, along with the experience modeling group within Sapient, which has a unique approach to the problem.

Creative Good: changing the world, one site at a time

Creative Good was started by Mark Hurst, previously a graduate researcher at the MIT Media Lab and head of product development for Yoyodyne, an online direct marketing company that Yahoo! acquired in 1998. Hurst saw that as the Web was becoming more mainstream, usability was turning into a major problem for many popular sites, but there was little good analysis of either the problem or the potential solutions. So he started doing research on leading e-commerce sites, eventually producing a report in June 1998, co-written with Robert Seidman, titled “In Search of E-Commerce.”

Hurst's report critiqued major sites and offered suggestions for improving navigation and usability. Among those who purchased it was a senior executive at Travelocity, who engaged Hurst to help
redesign the popular travel site. Another enthusiastic reader of the report was Phil Terry, a consultant working for McKinsey & Co. Terry liked Hurst’s approach so much that he became an advisor to Creative Good and eventually came on board full-time as CEO.

Creative Good’s consulting practice blends strategy, usability and organizational work. Looking at the site alone often amounts to treating the symptoms rather than the core problem, Terry says. The capabilities and culture of the company or business unit must also be taken into account. Among other things, Creative Good operates usability testing facilities it calls “listening labs.” The company insists that clients watch in person as users go through the tests, because that’s the best way for them to learn how to listen to what customers want.

In addition to its consulting work, the company publishes reports and a free email newsletter (available at http://www.goodexperience.com) that has over 40,000 subscribers. Last year Creative Good also organized its first conference on online customer experience.

Terry and Hurst prefer the phrase “customer experience” to usability because they see the latter too often sliding into mechanical, task-based analysis. “In software you can be task-driven, but on the Web you want to be able to let the customer set the context,” says Terry. When Creative Good does its usability tests, it doesn’t give users specific tasks to perform. In a real-world situation, users often simply fail to understand the purpose of a site or a feature, even if it seems obvious to the designers.

With Gateway, for example, Creative Good led a redesign effort that resulted in a 40-percent increase in the conversion rate of visitors who purchased on the site. Gateway’s home page required users to first identify their customer category, such as consumer, corporate, government and education, even though the vast majority of visitors were in the consumer category. The result was confusion. Creative Good’s research also found that seemingly powerful features, such as online configuration, were of little importance to Gateway’s primarily novice-user audience. The site was redesigned with fewer options and computers offered as pre-defined bundles rather than lists of configurable components.

Terry believes online usability is still in its earliest stages, partly because the Web itself is still a young medium. Mainstream users are still uncomfortable with online interfaces, so it’s incumbent on companies to bend over backwards to make things easy for them to understand. “You have to start by understanding the limitations of
SAPIENT’S EXPERIENCE MODELING GROUP

Sapient is an e-business consulting firm founded in 1991 and now employing 3,200 people worldwide. In 1999 it acquired E-Lab, a consulting firm that specialized in helping large companies better understand their customers’ frame of reference. The E-Lab team became the core of Sapient’s experience modeling (“X-Mod”) group, which now numbers more than 100 people.

Experience modeling, which draws its techniques from anthropology and sociology, seeks to gain a deep understanding of people’s everyday experience and how it shapes their response to products and technologies. X-Mod practitioners do things like follow test subjects around or go into their homes to examine the contents of their cabinets, because the subtle, unthinking decisions people make day by day reflect how they see the world.

“We’re trying to find the behavior people use to express who they are,” says Rick Robinson, Sapient’s chief experience officer. New technologies can influence that behavior.

For example, some people answer mobile phones in public, while others don’t. People calling colleagues on their mobile phones will often ask “where are you,” which was a meaningless question when every phone was tied to a physical location. Experience modeling seeks to reconstruct how people think about such phenomena and what they do in response, which can then be used to provide products and services that match those expectations.

Among Sapient’s customers is iOptions, a Website for holders of employee stock options. The traditional model for financial services is the customer lifecycle – saving for a car, a house, retirement, college for the kids, and so forth. Sapient found that people think about stock options differently. Options are a sort of “play money,” distinct from the real money that goes into the traditional cycle of saving and spending. People look at stock options as an opportunity to break out of that cycle, potentially allowing them to retire early or purchase luxury items they otherwise wouldn’t be able to afford.

iOptions incorporated these insights into its business plan and its site design.

Robinson says a primary difference between his group’s approach and usability or market research is that X-Mod doesn’t start with a particular product or service. “Usability testing is always done against something,” he says, whereas X-Mod starts earlier on and explores users’ context in a generalized way.

Robinson acknowledges that when it comes time to evaluate the effectiveness of a Website, usability techniques come in handy. But the development process must always start with some assumptions about the kinds of things users will want, and that’s where Robinson sees X-Mod adding a valuable perspective. “Software people are really used to using frameworks and talking about system architectures,” he says. “What we’re really trying to do is experiential architecture.”

Nielsen Norman: the user-experience supergroup

Jakob Nielsen and Don Norman, the founding partners of Nielsen Norman Group, have each written several books on usability-related topics. Nielsen became prominent as the designer of Sun’s early Web presence and author of a regular online column about user experience. Norman (who now splits his time with his job as president of Unext Learning Systems, see RELEASE 1.0, SEPTEMBER 2000) is known for his books and his work at Apple and H.P. Former Apple human interface evangelist Bruce Tognazzini and Brenda Laurel, founder of girl-oriented community site Purple Moon (see RELEASE 1.0, MARCH 1998), joined last year.

the technology-based interface, rather than the opportunities of it,” says Terry. That may clash with the better/newer/faster ethos of most technologists, but it’s necessary if companies want their Websites to generate transactions and satisfy customers.
Nielsen Norman works with a variety of clients to help them launch or revamp their Web presences. The terms of an engagement, from one-time design reviews through long-term “rent a guru” retainer arrangements, vary greatly depending on the customer’s specific needs. The company (and its principals individually) also holds a variety of seminars and tutorials on Web usability, including a “world tour” now in progress. Nielsen also writes about usability in books and through his Website (see resources section).

As discussed above (see page 5), Nielsen’s approach relies heavily on usability studies and live observation, combined with rules of thumb derived from his years of experience. Nielsen sees companies eventually going through a maturity curve in their appreciation of usability, moving from ignorance, to recognition that ease-of-use matters, to a focus on usability from the customer perspective, and finally to doing usability analysis before initial design and repeating the process over and over again after deployment to continually improve the site. “No one has ever designed the perfect UI,” he notes.

The Future of Usability

Rediscovering the lost art of user interface

One big problem with the current state of online usability is that people look at Websites in isolation. In fact, the Web is an interface. As such, it shares usability dynamics with other kinds of interactive user interfaces. And an interface is what the word implies: a boundary between users on one side seeking to perform a task or other function, and the provider on the other side seeking to achieve a goal such as making money or informing the world about something. “Usability is a matter of the ease-of-use of any interactive system,” declares Jakob Nielsen.

Before the Web, the most prominent area of interactive user-interface design was the PC operating system (OS). OS interface evolutions seem to go in waves, with short periods of intense experimentation bracketing long periods of relatively limited change. On the desktop, the move to WIMP (windows, icons, mouse, pull-down menus) interfaces such as MacOS and Microsoft Windows was the last such major change, and it was effectively complete more than a decade ago. Some of this can be tied to the dominance of Windows, but not all of it. Familiarity exerts a powerful grip on user behavior, as even Microsoft discovered with its failed Bob interface.
Despite this, there is reason to believe we may be approaching a new period of interface evolution. WIMP revolves around the desktop metaphor and the single-user PC. Yet computers are changing in three ways: moving beyond productivity applications into all aspects of life; becoming Internet-connected by default; and transmuting into all sorts of new shapes and sizes, from portable MP3 music players to “Webpad” tablets, such as 3Com’s Audrey, designed for the kitchen.

The Web is also going through an important shift. Static publishing-oriented sites are increasingly giving way to interactive Web applications (see Release 1.0, January 2000), and with the rise of peer-to-peer networking (see Release 1.0, November and December, 2000), standalone applications beyond the browser are coming back into vogue. All these changes call into question the stability and differentiation of both online and offline interfaces.

The Web and software collide
Popular desktop applications already incorporate Internet connectivity: Quicken downloads updated stock quotes, Norton AntiVirus pulls down new virus definitions periodically and Microsoft Outlook syncs its calendar with a server on a corporate LAN. Going forward, users will come to expect that virtually every piece of “local” software have an Internet component. Of course, there are times when the user isn’t connected to the Internet, such as when he or she is on a plane. Application user interfaces must make a smooth transition between the two states.

Beyond this, though, the field is wide open. If there’s one thing we’ve learned from usability studies on existing Websites, it’s that user preferences are hard to predict in advance. Witness the craze for “skinnable” interfaces. Skins, or changeable user-interface templates, first gained steam with music software such as WinAmp, but the concept has now extended to many other software categories and even to mobile phones and PCs with swappable faceplates. Users like to personalize their technologies, or perhaps they just like the thought of having options.

As we discuss above, Web developers are gradually coming to realize that listening to their users is a smart business approach. Yet software has traditionally been a top-down creation. Developers create the user interface for a software product, and users have little or no ability to change it. The ultimate example is the operating system,
Resources & Contact Information

Phil Terry, Mark Hurst, Creative Good, 1 (212) 736-2075; fax, 1 (212) 736-0697; phil@creativegood.com, mark@creativegood.com

Nirav Tolia, Epinions, 1 (650) 616-6500; fax, 1 (650) 616-6510; nirav@epinions-inc.com

Jerry Tarasofsky, Eric Fisher, IPerceptions, 1 (877) 796-3600; fax, 1 (866) 484-2600; jerryt@iperceptions.com, eric@iperceptions.com

Jakob Nielsen, Nielsen Norman Group, 1 (650) 938-9188; fax, 1 (650) 938-7688; nielsen@nngroup.com

Andrew Payne, Revenio, 1 (781) 852-2601; fax, 1 (781) 851-2626; payne@revenio.com

Rick Robinson, Sapient, 1 (312) 640-4451; fax, 1 (312) 640-4455; rrobinson@sapient.com

Andre Schwager, Rosalie Buanauro, SatMetrix Systems, 1 (650) 390-9001; fax, 1 (650) 390-9007; andres@satmetrix.com, roselieb@satmetrix.com

Elizabeth Charnock, Troba, 1 (415) 552-3817; ebc@troba.com

Artie Wu, Vividence, 1 (650) 645-5040; fax, 1 (650) 655-4725; artiew@vividence.com

For further reading:

Jakob Nielsen, Designing Web Usability (New Riders, 1999)


through which one company defines the standards and structures for millions upon millions of users.

Contrast that to the Web, where anyone can be a designer of a site that is available to millions of people. As with desktop publishing, this freedom leads to a tremendous amount of poor-quality work. However, it also makes it possible for quality design to rise to the top. Customers can use the Net to talk to one another as never before. Those who create ineffective interfaces will increasingly have no place to hide, while those willing and able to listen to customer feedback and iterate accordingly will build valuable customer relationships. ■ R 1.0
Registration is now open for the twenty-fourth annual PC (Platforms for Communication) Forum, to be held this year in Scottsdale, Arizona from March 25th to 28th.

The future is all about definition. In a world that is increasingly confusing, cluttered, cost-conscious and competitive, companies and people with a clear vision will succeed. Last year, vague promises were enough; this year, investors, customers, press, employees... all want well-defined propositions. Companies and leaders with a coherent vision will be able to communicate it; others will mumble. Successful vendors will need to define what they sell in order to know how to package it and how to price it; they will need to know their value-added to define terms with partners and resellers. They need to define themselves quickly on a Web page, and deeply in every interaction with customers and partners.

Confirmed speakers include:

- Kurt Andersen, Inside
- Ron Croen, Nuance
- Rob Glaser, RealNetworks
- Ellen Hancock, Exodus Communications
- Mark Hoffman, Commerce One
- Chris Jackson, Vesta Wireless
- Jeffrey Katz, Orbitz.com
- Martin Nisenholtz, Times Company Digital
- Ray Ozzie, Groove Networks
- Vivek Ranadivé, TIBCO Software
- Fran Rooney, Baltimore Technologies
- Stratton D. Sclavos, VeriSign
- Megan J. Smith, PlanetOut
- Eric Sumner, Dynamicsoft
- Steven Wallman, FOLIO fn

Plus several other speakers and company presenters to be announced!

To register, visit our Website at

www.pcforum2001.com

PC Forum sells out every year, so get your registration in early!
# Calendar of High-Tech Events

**2001**

**JANUARY 22-24**  

**JANUARY 25-30**  
**WORLD ECONOMIC FORUM** - Davos, Switzerland. This year’s Forum will once again bring together top business and political leaders, concerned citizens and creative academic thinkers. For info, see www.weforum.org.

**JANUARY 29-FEBRUARY 1**  

**JANUARY 30-FEBRUARY 2**  
**LINUXWORLD CONFERENCE & EXPO** - New York, NY. Learn to develop, integrate, and run a business on the Linux OS, with general championing of Linux along the way. For more info, call 1 (800) 657-1474; email, linuxworldexpo@idg.com; www.linuxworldexpo.com/papers.html.

**FEBRUARY 4-6**  
**DEMO 2001** - Phoenix, AZ. Chris Shipley picks the hot startups again. For more info, call 1 (650) 312-0545; fax, 1 (650) 286-2750; email, registrar@demo.com; www.demo.com.

**FEBRUARY 10-14**  
**MILIA** - Cannes, France. For professionals involved in the creation and distribution of interactive content. For info, contact Ted Baracos at +33 (1) 41 90 44 80; fax, +33 (1) 41 90 44 70; email, info@milia.com; www.milia.com.

**FEBRUARY 14-16**  
**O'REILLY PEER-TO-PEER CONFERENCE** - San Francisco, CA. Gee, maybe there's something to this peer-to-peer thing? Meet some of the companies we have written about. For information, visit conferences.oreilly.com/p2p/.

**FEBRUARY 21-24**  
**TED 11** - Monterey, CA. Richard Saul Wurman invites you to celebrate youth, age, the two words “will” and “still” and presentations by people under 30 and over 70. For more info, call 1 (401) 848-2299; fax, 1 (401) 848-2599; email, wurman@ted.com; www.ted.com.

**FEBRUARY 24-MARCH 1**  
**CEBIT** - Hannover, Germany. The world’s largest trade fair for office, information and telecommunications technology. For more information, call 1 (609) 987-1202; fax, 1 (609) 987-0092. www.hfusa.com/cebit.htm.

**MARCH 25-28**  
**PC FORUM** - Scottsdale, AZ. Join us! Registration is now open at www.pcforum2001.com. For more information contact Daphne Kis at 1 (212) 924-8800; daphne@edventure.com.

---

|= Events Esther plans to attend.  
|= Events Kevin plans to attend.

Lack of a symbol is no indication of lack of merit. The full, current calendar is available on our Website, www.edventure.com. Please contact Kara Holmstrom (kara@edventure.com) to let us know about other events we should include.
Register now for PC Forum! This year’s theme is “Define Yourself.” Registration forms and additional information are available at http://www.pcforum2001.com.

Join our email list! We’ve started a free email newsletter, The Conversation Continues, for commentary, industry analysis and pointers to interesting Websites. To sign up, please visit http://release1.edventure.com/conversation, or send email to conversation@edventure.com and you’ll automatically be added to the list.

Do we have your email address? Release 1.0 subscribers can now download each month’s issue electronically. If you have not already done so, please send your email address to natasha@edventure.com or fax it to 1 (212) 924-0240 in order to enable online access.

Release 1.0 Subscription Form

Complete this form and join the other industry executives who regularly rely on Release 1.0 to stay ahead of the headlines. Or if you wish, you can also subscribe online at www.release1-0.com.

Your annual Release 1.0 subscription costs $795 per year ($850 outside the US, Canada and Mexico), and includes both the print and electronic versions of 11 monthly issues; 25% off the cover price when you order from our online archives; a Release 1.0 binder; the bound transcript of this year’s PC Forum (a $300 value) and an invitation to next year’s PC Forum.

NAME ____________________________________________
TITLE ___________________ COMPANY _________________________
ADDRESS ____________________________________________
CITY ___________________ STATE ______ ZIP _______ COUNTRY _______
TELEPHONE ___________________ FAX ___________________
EMAIL* ________________________ URL _______________________
*personal email address required for electronic access.

☐ Check enclosed  ☐ Charge my (circle one): AMERICAN EXPRESS  MASTER CARD  VISA

CARD NUMBER ________________________________ EXPIRATION DATE __________________
NAME AND BILLING ADDRESS _________________________
SIGNATURE _________________________________

Please fax this form to Natasha Felshman at 1 (212) 924-0240.

Payment must be included with this form. Your satisfaction is guaranteed or your money back.

If you wish to pay by check, please mail this form with payment to: EDventure Holdings, 104 Fifth Avenue, 20th Floor, New York, NY 10011, USA. If you have any questions, please call us at 1 (212) 924-8800; email us@edventure.com; www.edventure.com.