

People vs. Technology: Who's Using Whom?

by Paul Chin

Designers must focus on user-centered design, not technology, if they want to build a human-friendly website and make a real connection with users.

We don't often think about working on a computer as *interaction*. It's a word usually associated with social activity—conjuring up images of dinner parties, pithy remarks and tinkling wine glasses. But interacting is precisely what we're doing every time we sit in front of our computer—that digital window to the internet.

For many users, however, this interaction between man and machine has always been an uneasy one—and for some, an unnatural one. We're accustomed to interacting with other people on a face-to-face basis because, as children, we were socialized by our parents and in school. We were taught proper behavior and how to play nice. And over the years, with experience, we learned to deal with other people, the effects our actions have on them and their reactions to us. But occasionally, someone walks by and hits us in the face with a lemon meringue pie and we're left stunned, not knowing what to do.

Not everyone is similarly accustomed and socialized to dealing with technology. The internet has evolved beyond a series of servers and workstations.

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It has become a global community where millions of users go to connect and interact with other people and ideas through websites. But poor, technology-centered design can negatively impact the quality of this interaction, leaving that sour taste of lemons in too many users' mouths.

The goals of human-computer interaction design

There's an unfortunate disconnect between how humans naturally function and what a lot of technology has delivered. The industry has made things so complicated that words like *intuitive*, *accessible* and *user-friendly* are bandied around as selling points for technology. Developers and marketers adorn their wares with these words like badges of honor, using them to describe something as though it were an extraordinary phenomenon, rather than a matter of fact.

Human-computer interaction (HCI) practitioners are dedicated to bridging this disconnect. They seek to improve the relationship and interaction



Welcome to my world!
 Web and graphics designer Stéphane Guillot (www.stephaneguillot.com) eschews the traditional website in favor of a more creative, game-like environment. Guillot presents his background information and portfolio within a virtual space inhabited by a humorous avatar that animates whenever a user selects a menu item or object within the virtual “room”.



Defining Human-Computer Interaction

“Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them.”

– Association for Computing Machinery’s (ACM) Special Interest Group on Computer-Human Interaction (SIGCHI)

Note that the term “computer” in HCI can refer to any number of technologies and media. When practitioners discuss HCI in website design, they’re not talking about the computer that allows us to access a website, but rather the website itself.

Human-computer interaction disciplines

HCI is a vast interdisciplinary field that can include, but is not limited to, professionals involved in:

- Aesthetics
- Anthropology
- Artificial intelligence
- Computer science
- Graphic design
- Engineering
- Ergonomics
- Information architecture
- Library science
- Linguistics
- Philosophy
- Psychology
- Social psychology
- Sociology

between human users and technological tools by focusing on user-centered design.

“One goal [of HCI] is to study how people interact with their environments—especially those enhanced by digital technology,” explains Dr. Erik Stolterman, professor and director of Human-Computer Interaction Design at Indiana University’s School of Informatics (<http://hcid.informatics.indiana.edu>) and author of the HCI blog Transforming Grounds (<http://transground.blogspot.com>). “[The purpose] is to understand the practicalities of these interactions and what this new interactive reality does to people, how it changes their lives and how it influences their life experiences. Another goal is to find new ways of interaction, and to teach it.”

Design should extend beyond the technology and media that supports the digital community. Users are not interacting with the medium; they’re using it to interact with those on the other side of the medium. “People are spending more and more time interacting with the web, and it becomes their *lifeworld*, a large part of their experienced reality. To design this reality in a human-centered and morally responsible way is a challenge that has to be considered seriously,” says Stolterman.

Design for people, not technology

Technology needs to support us, to function as an extension of our own innate abilities to accomplish a task. Unfortunately, this human-computer disconnect forces users to reconcile the way they naturally work with how technology makes them work—or, more cynically, how designers want them to work.

The human-computer disconnect can be further widened by the manner in which a website is designed. There are far too many website creators who get caught up in the glitz and glamour of what web technology allows them to do. But designers need to have a deeper understanding of the fact that regardless of what they can *technologically* do with a website, it should never take precedence over what they must *logically* do with a website.

“Open your mind and realize that everyone is not like you,” advises Donna Maurer (<http://maadmob.net/donna/blog/>), an information architect and interaction designer who lectures and trains on usability testing, accessibility, and web and interface design. “The person who designs the website is not necessarily the same person who uses the website. A website designed by an egocentric designer will always be less usable than one designed for a group of real people. [Users] have very different backgrounds in technology, which means they will have different responses to a website. This can create a gap

between the designer’s ideas and the users’ understanding. Respect other people, their skills, their abilities and inabilities.”

It’s easy to see how problems can arise when designers impose their will—through their designs—on users. Designers should never seek to alter the manner in which people work; rather designers need to focus on learning new ways to shape technology to conform to the way people naturally work and think. It’s the technology that must cater to people, not the other way around. Designers can’t go about the day blaming users for lack of technological sophistication.

“Humans are what they are,” explains Stolterman, “and design has to deal with that. Instead of saying that people don’t have enough knowledge or skills, we could say that applications are not sophisticated enough to handle the abundant richness of human nature and its diversity. There are never any disclaimers in design. You can’t say, ‘This [would be] a good design if only I had other users.’ A good design is centered on the people who are supposed to use it.”

Making websites more human-friendly

Every human being is different, with his or her own likes and dislikes, habits and perceptions. What’s considered human-friendly to one person may not be to another. This is what makes website design so difficult. Designers are trying to use a vast, global medium to accommodate all the minute tastes and personal styles of individual users.

“I don’t think it’s possible to have a 100-percent perfect website,” says Maurer. “There will always be things that don’t work for some people, and there are always people with completely unreasonable expectations. Even though we are very different at a detailed level, we have the same underlying brain structure and goals. We can rely on a set of base physical and cognitive abilities. But our experiences and knowledge are different and are affected by our situation and upbringing. This is why it is both easy and hard to design for humans. That’s where user research is important—learning about the actual people who will use your website, what they want to do, how they describe items and how they react to potential designs. A human-friendly website must anticipate what people intend on doing before they know that’s what they want to do.”

The overall appearance and structure of a website—typography, layout, color choices, navigation, information architecture—communicates something to users. Websites engage users’ visual senses first. If designers fail to connect visually with their target audience, users will easily lose interest and patience. “People are almost always searching for experiences

OK, here I go. I'm going to make this whole website right now on this dry-erase board.

Actually, I don't own a dry-erase board. This is just the top of my refrigerator.

It comes out May 15th
It will mostly look like this but no quote on the front and



here are more accurate examples of the 2 colors:



Going low-tech

The website for filmmaker, performing artist and writer Miranda July's new book *No One Belongs Here More Than You* (www.noonebelongs.heremorethanyou.com) takes a very unconventional and nontechnical approach. The site contains a series of sequential photographs—with navigation consisting of nothing more than back and forward arrows—and connects with people by setting the site against the backdrop of commonplace household objects. This takes the site completely out of the techie realm so that anyone, regardless of technical proficiency, can relate.

that have a ‘flow-like’ quality,” says Stolterman. “They do things on the web not because they like browsing or searching, or because they enjoy interacting with websites. They are looking for experiences, such as learning, entertainment and communication. When these experiences are interrupted by bad design, people get frustrated and angry.”

In order to maximize user retention and form a positive connection with users, website designers and owners can employ simple techniques to make a website more human-friendly:

1. Navigation must be self-explanatory. You should never have to explicitly explain how your website’s navigation works; it must be self-explanatory. If you need to place verbal instruction such as *click here* or *click and drag for options*, try again.

Navigation is the most functional component of a website, because it’s the mechanism that ties one piece of information to another—it should never draw users’ attention away. The less a user thinks about a website’s navigational system during a session, the better job it has done.

2. Organize web content by context. The human mind works linearly, so group related information hierarchically, with general information appearing on upper levels and more detailed information in sublevels. Information should never be scattered about or buried under various pages that don’t fol-

low the natural flow of the site’s navigational structure. This forces users to navigate a roundabout simply to form a single thought. There are enough distractions on the web; don’t make matters worse by creating them within your own website.

3. Avoid screen clutter. Are you paying a website host by the page? No? Then why cover every inch of screen real estate with content? At-a-glance content absorption is preferred. Users should get an overall impression of what any website page is about with only a cursory glance and not have to study it. Most people aren’t good at absorbing large amounts of information at one time. It’s very taxing having to wade through mounds of content on every page.

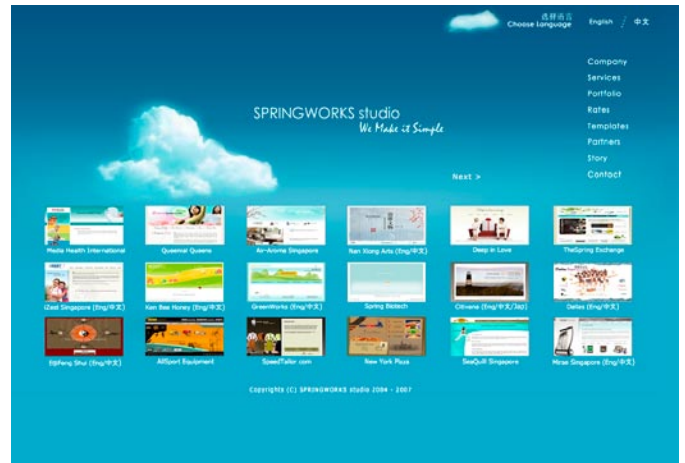
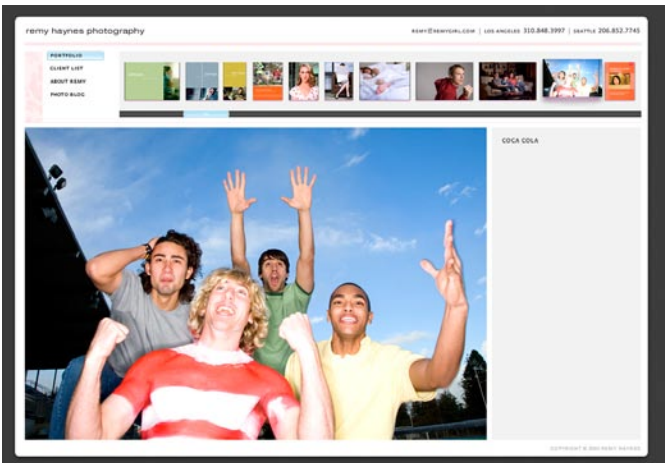
4. Stay consistent. Nothing will disorient a user more than inconsistent design and navigational structure. Designers should cater to users’ natural abilities of recognition, rather than recollection. “Things become intuitive as people make a connection between their experience and what they are seeing in front of them,” explains Maurer. “Consistency and use of common patterns across websites is a good thing; it helps people to quickly understand what they can do with what is in front of them.”

5. Understand your audience. The internet is made up of a highly diverse population. It’s nearly

What not to do

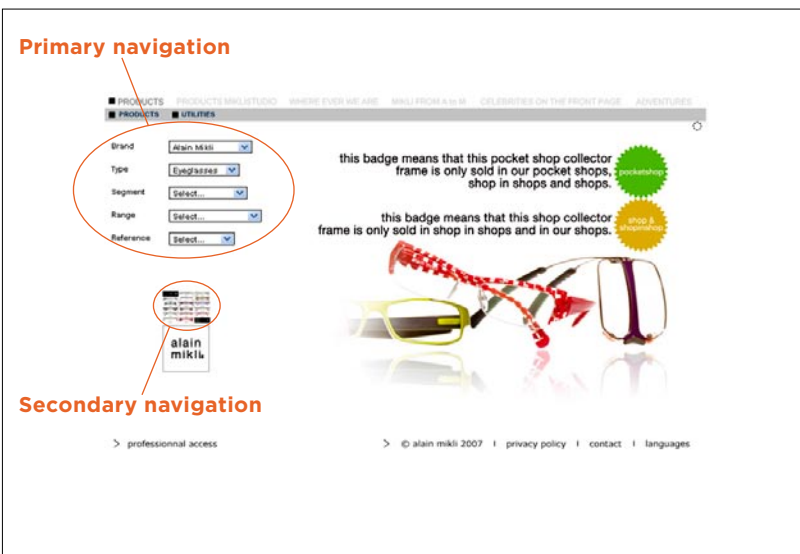
The home page for Mikli Paris (www.mikli.com/mikli.html), designer of fashion eyewear, is extremely uninviting. Users are confronted with several loud warning labels right on the main page. This is not the way to attract users; it’s the website equivalent of barbed wire and fences.





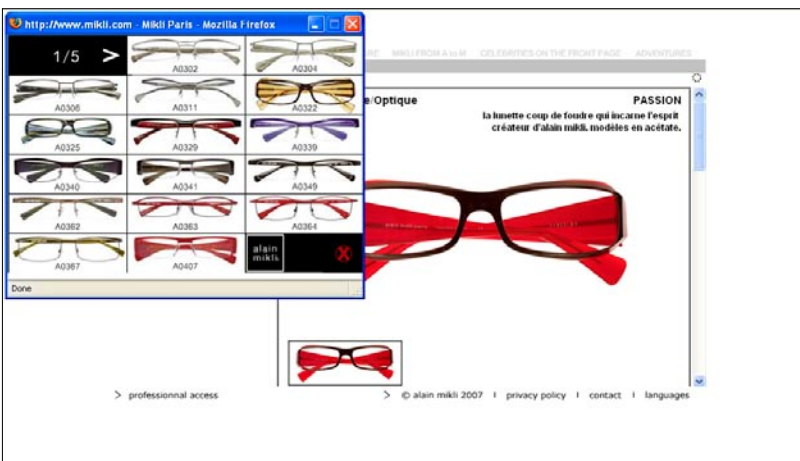
Maximum impact, minimal clutter

The websites (at top) for photographer Remy Haynes (www.remyhaynes.com) and web design firm Springworks studio (www.springworks.biz) are excellent examples of simplicity in action. Both sites require very little interaction on the user's part, since most of the content presented on each page takes up only one screen, eliminating the need to scroll. This allows users to focus on the content, rather than navigating the site.



Where am I?

The navigational system on the Mikli Paris site (at left) is too convoluted. The primary navigation consists of a series of drop-down menus which—unless you're familiar with the company's line of products—will mean little to the average user (What's a "segment"? A "range"? A "reference"?). The secondary navigation is a little more helpful, appearing as a pop-up displaying thumbnails of each individual model. Unfortunately, whenever you click on the main window, the pop-up window recedes to the back, forcing users to go back and forth from the main window to the navigation window.



Human-computer interaction resources

The Association for Computing Machinery's (ACM) Special Interest Group on Computer-Human Interaction (SIGCHI), is at www.sigchi.org

Interaction Design Association (IXDA): www.ixda.org

www.interaction-design.org

Jakob Nielsen's website: www.useit.com

Paul Sherman's UsabilityBlog: www.usabilityblog.com

Putting People First: www.experientia.com/blog/

The British HCI Group's UsabilityNews: www.usabilitynews.com

The International Ergonomics Association (IEA): www.iea.cc

The Usability Professionals' Association: www.upassoc.org

impossible to cater to everyone's individual predilections and idiosyncrasies, but it's crucial to know who your core audience is. You can't make a connection with those you don't understand. "Do as much as is humanly possible to understand the users of your website; then design for them," advises Maurer. "Imagine a teen site using a visual appearance appropriate to a government site, or vice versa. The site won't feel like it belongs to the target audience."

Try using common language instead of technical jargon or obscure acronyms to avoid alienating anyone. And—if resources permit—you can even put a test group together to get feedback and suggestions.

6. Consider using a chatterbot. A virtual assistant, or chatterbot, can help make interaction with a website feel more like interacting with a real person. Chatterbots have basic artificial intelligence capabilities and can respond to common user questions. Chatterbots often give those who aren't technically inclined a higher level of comfort—as opposed to navigating a site to find answers—since the interaction feels more like a one-to-one conversation.

7. Limit flashy, nonfunctional gimmicks. A site can't be so flashy as to distract users from the goal. Sites need to be functional first and flashy second. Unfortunately, because of designers' enthusiasm for web technologies, the latter can easily trump the former. "I think we are still in an era when simplicity and well-designed functionality is lacking," admits Stolterman. "Complexity is still the major 'enemy' of good design."

8. Always acknowledge users' e-mail. An e-mail address is not a decorative website ornament. If you don't intend to respond to user e-mail, don't put an address on your website simply to have it there. Not having an e-mail address on a website can be a momentary annoyance for users, but putting an e-mail address on a website and then not responding to users who take the time to write will cause long-term annoyance and even make them feel alienated and ignored.

While it's not always possible to answer everyone, you should at the very least acknowledge users' comments or questions to show there's actually a real person behind the website.

Bridging the great divide

Effective HCI design is part science and part art. It is as much a study of human nature as design. There is no magic formula to making a human-friendly website, however, because the possibilities and design options are as wide and varied as individual tastes and backgrounds.

Good website designers create experiences for an audience. They build websites that users can interact with—not simply view. After all, users don't sit in front of their computers as bystanders and expect miraculous things to happen before their eyes. The quality of a website can be measured in users' satisfaction with this experience.

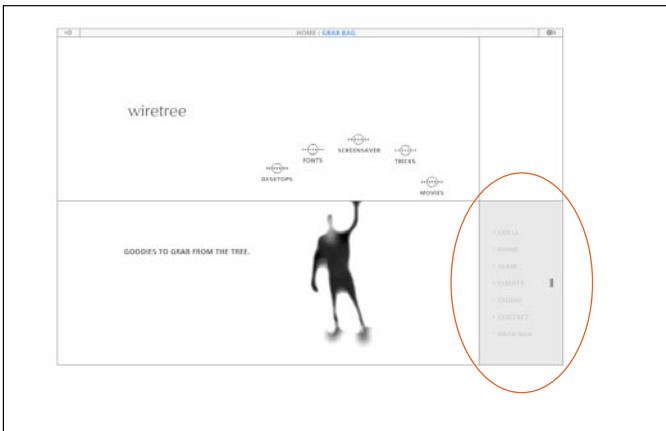
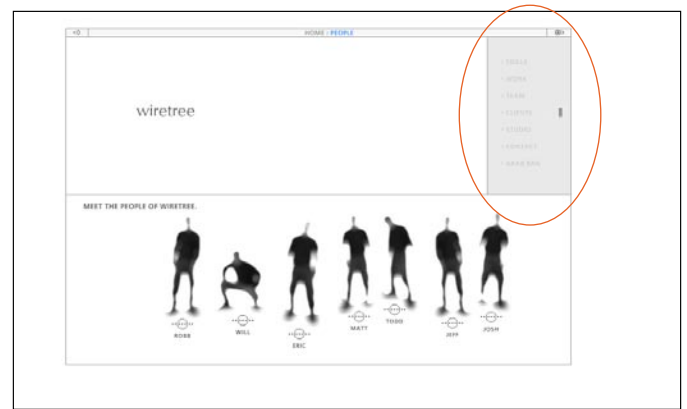
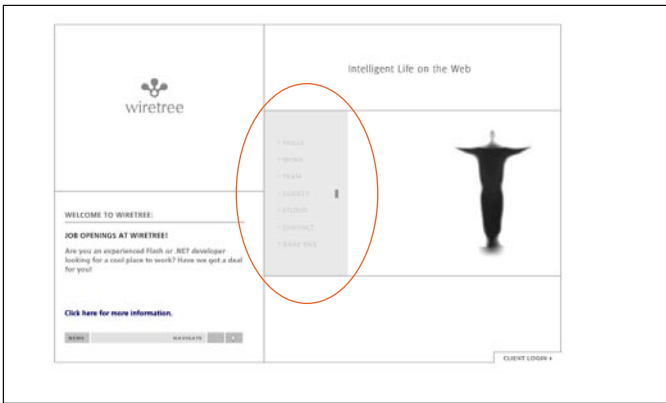
Always remember that we're designing *for* people, *with* technology. By applying user-centered design principles, we're not only helping users deal with that pie in the face, we're helping them avoid the pie altogether. ☺

The screenshot shows the HTML-Kit website homepage. At the top, there's a navigation menu with 'Home', 'Download', 'Plugins', and 'Support'. A prominent banner for 'HTML-Kit Tools' features a 'LOW COST FREE SETUP' badge. Below the banner, the page is organized into several columns of text and images. On the left, there's a section for 'Free HTML-Kit 292' and 'Building a New Kit'. The middle column contains 'Registering Kit', 'Latest Features', 'Plugins for Tools', 'Tools in Action', 'CSS Poster for your stylesheets', 'HTML-Kit Build 292', 'DOWNLOAD', 'FEATURES', 'GPS for HTML and XML documents', and 'Making sense of CSS'. On the right, there's a 'My Account' sidebar with 'Questions?', 'Tools for Tasks', and 'Translations'. A 'Sponsored Links' section is also visible, including 'Australian Web Site Hosting' and 'Reseller Web Hosting'.

The screenshot shows the HTML-Kit Tools website. At the top, there's a navigation menu with 'Home', 'Download', 'Plugins', and 'Support'. A prominent banner for 'HTML-Kit Tools' features a 'LOW COST FREE SETUP' badge. Below the banner, the page is organized into several columns of text and images. On the left, there's a section for 'What's New 10% Off Registration' and 'Feature Tour'. The middle column contains 'New Kit!', 'It's a New Kit!', 'Portable', 'New Kit!', 'Screenshots', 'Index of Features', 'Plugins for Tools', 'Sponsored Links', 'Search Engine Optimization', 'Affordable web site & e-commerce design', 'Reseller Web Hosting', and 'How to advertise on this site'. On the right, there's a 'My Account' sidebar with 'Questions?', 'Tools for Tasks', and 'Translations'. A 'Sponsored Links' section is also visible, including 'Australian Web Site Hosting' and 'Reseller Web Hosting'.

Great tool, awful site

The site for the code-based HTML editor HTML-Kit (www.htmlkit.com) bombards users with too much information on every page. It's nearly impossible to get an at-a-glance idea of what each page contains without having to read through it. Not only is content packed into the left, right and center columns, the screens scroll down almost endlessly.



The infamous floating menu

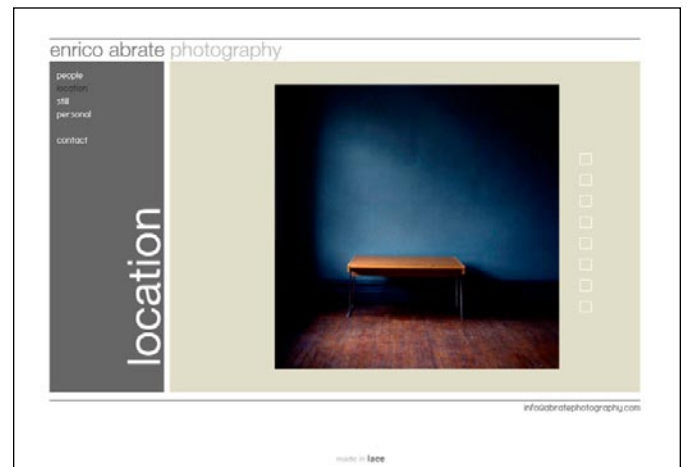
The website for web design firm Wiretree (www.wiretree.com) is actually nice. But a nice design is harmed by a common mistake: inconsistent menu placement. Each page displays the core menu in a different area of

the screen. Normally, it's only the content portion of the screen—the primary area of focus—that changes. When the main menu moves to a different location, it forces users to cognitively “reprocess” the entire page every time they move to a new screen.



May I help you?

The website for home furnishing giant IKEA (www.ikea.com) makes use of a virtual assistant (or chatbot) called “Ask Anna” that mimics interaction with a real person. Anna is like an interactive FAQ, capable of answering common questions about the store’s services and products. Anna is even able to answer small-talk questions like “How are you?”



I heart simplicity.

The website of photographer Enrico Abrate (www.abratephotography.com) is a perfect example of effective simplicity. It

contains only essential website elements, minimal wording and makes use of low-key neutral colors, allowing his work to be the primary focus.