

**E-COMMERCE
USER EXPERIENCE**

High-Level Strategy

*“Usability is a prerequisite for e-commerce success.
... It doesn’t matter how cheap the products are if
people can’t find them or if they get stuck on a step
in the checkout process.”*

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Executive Summary

Usability is a prerequisite for e-commerce success. If people cannot shop, then the site won't sell a thing. It doesn't matter how cheap the products are if people can't find them or if they get stuck on a step in the checkout process.

True, usability does not guarantee success for an e-commerce site. If prices are too high, people won't buy even if it is easy to navigate the site. But usability is one of the most important determinants for the success of an e-commerce site, especially considering how cheap it is to include basic usability methods in a project.

This report presents general findings regarding the relation between usability and e-commerce, including the following issues:

- **Why people abandon e-commerce sites.** People often feel powerless or overwhelmed while they are visiting a site, and other sites are just a click away.
- **The success rate for online shopping tasks.** The results of our own usability studies compared with those presented in several other reports.
- **Domestic versus international success rates.** Sites are so difficult to use for non-native speakers that improvements in international usability count as one of the greatest opportunities for increasing e-commerce sales. An entire report in this series (International Users) is devoted to international usability issues.
- **Scorecard for compliance with our design guidelines.** Amazon.com follows 72% of the 207 guidelines we have documented. Other big sites' scores are lower, and smaller sites have horrible usability.
- **Different types of usability guidelines.** How to develop your own domain-specific guidelines.
- **Budgets for usability in Web projects.** What other companies spend, and how best to apply your usability budget to increase sales and user loyalty.

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About the Study – Overview of Method

An international team of five usability experts led by Jakob Nielsen conducted usability tests of 20 business-to-consumer e-commerce websites. A total of 64 users participated: 39 from the United States and 25 from Denmark, giving us data about both domestic users (19 of 20 sites were American) and overseas users. Users ranged in age from their twenties to their fifties. All users had previously shopped online and most had made purchases; however, we screened out participants who had technical knowledge of the Web.

The typical user tested three of our 20 selected sites in a test session lasting two hours. Each site was tested by a minimum of nine users, six from the US and three from Denmark. We chose sites in seven different industries (such as clothing and toys) so that within each industry we had two or three sites for comparison.

Each user spent about 40 minutes on each site. We supplied the tasks, which were modeled on common goals of users during online shopping. Most tasks either asked the user to find a specific item that we knew existed on the site or were more open-ended, allowing users freedom to shop according to their own preferences. In most cases, we stopped the users before they entered a credit card number, so they did not actually complete the purchase. We also had a short task for each site where we asked users to find customer service information, such as how to cancel an order or return an item.

A highly experienced facilitator sat in the same room with the user, providing instructions to the user and taking notes. We asked users to think aloud as they worked.

Our Methodology report provides greater detail about how we conducted this study, including copies of all the tasks.

Acknowledgement

We thank Shuli Gilutz and Marie Tahir for additional research and analysis used in writing this report.

Sites We Tested

Category	Site name	Main products offered
Clothing	Boo (www.boo.com)	Fashion and sportswear for men and women
	Jcrew (www.jcrew.com)	Clothing for men and women
	NorwaySweaters (www.norwaysweaters.com)	Sweaters in traditional Norwegian patterns
Department Stores	Nordstrom (www.nordstrom.com)	Apparel, shoes and accessories for men, women
	Sears (www.sears.com)	Tools, appliances, and home services
	Wal-Mart (www.walmart.com)	Discount department store
Flowers	1800flowers (www.1800flowers.com)	Flowers, gourmet foods, candies and gift baskets
	Iflorist (www.iflorist.com)	Flowers and plants
Food Novelties	BasketHaus (www.baskethaus.com)	Custom gift baskets that include foods and novelties
	Gevalia (www.gevalia.com)	Specialty coffee, tea, brewing equipment, desserts, and glassware
	Peet's (www.peets.com)	Freshly roasted whole bean specialty coffee
Furniture	Furniture (www.furniture.com)	Furniture and accessories for the home
	HermanMiller (www.hermanmiller.com)	Office, healthcare, and residential furniture
	Living (www.living.com)	Furniture and accessories for the home
Entertainment Media	CustomDisc (www.customdisc.com)	Custom music CDs containing songs chosen by the user
	Reel (www.reel.com)	Videos and DVDs
	TowerRecords (www.towerrecords.com)	Music CDs, videos and DVDs
Toys	Disney (www.disney.com)	Clothing, toys, collectibles, etc. featuring Walt Disney characters
	eToys (www.etoys.com)	Toys, books, software, videos and games for children
	SmarterKids (www.smarterkids.com)	Educational toys, books, software, videos and games for children

Usability and E-Commerce

Usability is one of the most important determinants for the success of an e-commerce site. The first law of e-commerce states: “if the customer cannot *find* the product, the customer cannot *buy* the product.” In fact, as discussed in this report series, there are many additional usability concerns in e-commerce beyond the simple ability to locate a desired product. Each and every usability deficiency in a design becomes an obstacle to the shopper’s ability and willingness to buy. Low usability equals lost sales. It’s as simple as that.

In simple terms, the success of an e-commerce site can be described with the following formula:

$$\text{Unique_Visitors} \times \text{Conversion_Rate} = \text{Sales}$$

Increasing the first number is the goal of your advertising budget. Increasing the second number is the goal of your usability budget. In almost all e-commerce companies, the relative size of the two budgets is such that the greatest increases in sales will come from increasing the investment in usability. After all, to increase the desired outcome by a certain percentage, you can increase either of the two deciding parameters by that percentage. To increase visits by 10% usually requires an increase of much more than 10% in an already-large advertising budget. But the conversion rate can be increased by 10% through even the smallest usability project, if the site has never been subjected to systematic usability evaluation.

For the first few years of e-business, much attention was focused on the number of unique visitors to a site. Companies were sometimes valued based on this number instead of their real business models or ability to derive revenues and profits from the visitors. Getting people to your site certainly still matters: having the best site does no good if nobody knows about it. But it is at least as important to make sure visitors are satisfied and turn into customers. This second problem is the focus of usability and the goal of our design guidelines.

Of course, reality is more complex. It also matters how much each customer buys and whether people become loyal customers. These parameters are also highly affected by usability. The more pleasant and trustworthy a site seems, the more likely people are to return. The easier it is for shoppers to find what they are looking for, the more they buy. And the more that product descriptions and other content satisfy customers’ needs, the more likely they are to spring for high-ticket items.

Why People Abandon E-Commerce Sites

Is the Web really the ultimate customer-empowering environment? The Web as a whole *is* empowering, because consumers have the power to click over to the competition at the slightest whim. Why then do websites so often leave people feeling powerless? The Web increases accessibility and defies geographical barriers. But e-commerce websites often decrease accessibility and make it easier just to go to the nearest store.

The Web as a whole is all about choice. The range of places available for people to do business is astounding, the options almost endless. Individual websites, however, often don’t give people the flexibility that a physical store provides. Shoppers in physical stores have more power than those on e-commerce websites. Shoppers in

physical stores can approach an expert (a salesperson or even a fellow shopper), to ask questions, explain their problems, and get recommendations. If shoppers want to compare similar items in a store, they can usually view the items side by side.

One of the oldest guidelines for usable interaction design is to increase the users' sense of control and freedom. It feels *good* to be in control. It feels *bad* to be dominated by a machine. There are a few exceptions to this rule, such as operations that happen only once and when it may be better to abandon responsibility and let the system take over. The wizard used to install Microsoft Office is a great example of an oppressive interface that is probably acceptable to most Office users.

Viewed overall, the Web encourages unparalleled user freedom with its millions of sites to choose from. In recent user studies, we found that people sometimes browse several sites in parallel, which gives them even more control over where they shop and when they leave a site that is too difficult to use. In contrast, users are often completely powerless over the details of their destiny on individual sites. They can leave at any time, but if they stay, they are locked into the site's way of doing things.

The contrast with physical stores is great: stores empower shoppers by allowing them to change tactics if something isn't working for them. If you get a lousy salesperson in a large store, you can look for a different one. If the store map doesn't help you find the department you need, you can ask a salesperson or a fellow customer for help. If the item that you need is not available, good salespeople will help you to locate items in other departments or at other locations and have the items sent to you directly. Good stores know that it's not enough for the store to *look* nice, it must *act* nice as well. They support the customer's total experience, including location, staffing, returns, payments, sales and so on. Too often e-commerce sites focus on looking attractive or cool, without investing in the underlying needs of their customers.

A superior e-commerce site would put its customers in control of shopping again, by offering the best of both worlds: convenience, good product selections, price and feature comparisons, flexible strategies for locating products, and helpful customer service. Whenever people have the options they want, they feel powerful and in control. Unfortunately, most websites don't provide a user experience that feels like *shopping* — instead the experience feels like *searching*, which is not the shopper's goal. People want to shop (or *find*) in a way that seems natural to them, not to search or struggle using Web tools and features that offer inflexible ways to do things. Worse, these tools and features are often built without any regard for how real users think, group things, name things, or approach their problems.

Physical stores aren't perfect — far from it. Frustration abounds in traditional shopping, caused by lack of parking, crowds, annoying salespeople, better prices for the same goods in other stores, and products being out of stock. It is harder to abandon a store and shop at a different one instead. Sure, you can walk out of one store and drive to another, but it's a hassle. And would the next store be any better, or might you have to drive to the next town if you're still not satisfied? So in the physical world, people have a great incentive to shop where they are.

When shoppers don't get what they want, they leave the store, online or not. But they leave more readily on the Web. Considering the usability findings

presented in this report, it is no surprise that the Web is littered with abandoned shopping carts:

- In the physical world it is fairly difficult to get to another store but very easy to try alternative ways of getting what you want in the current store.
- In the online world, it is extremely easy to visit another e-commerce site but very painful to stay and attempt to get the current site to satisfy your needs.

Usability is the answer to this dilemma. Help your visitors get what they want. Make your site easy, fast, smooth, and pleasant. Watch people stay; watch sales increase.

Usability Increases Sales

E-Commerce companies closely guard their sales numbers, so there is not much publicly known about increased usability's effect on sales. In many cases, however, we know that sales increased by 100% to 400% when an e-commerce site launched an improved user interface. We know of one company that even increased sales by 2,300%, but this particular site was probably an exceptional case. Based on our experience, having sales more than double is not at all an unrealistic goal for a site that had ignored usability in the past but decided to embrace it for the next design.

Exactly how much do different degrees of usability impact sales? We don't know for sure. All our research proves is which design elements work, which designs are too difficult to use, and that poor usability can prevent a large proportion of users from being able to shop on a site. If a site follows more of the usability guidelines, it is natural to expect sales to increase, but usability cannot scientifically predict how much sales will grow.

We can speculate about the causes of the huge sales increases we often see. It appears that given two sites with the same merchandise and prices, people tend to choose the site that's easiest to use; and ease of use is perceived as a sign of trustworthiness.

One of the most likely explanations for the growth in sales that results from improved usability is that people recognize and prefer good service and high-quality websites. As a simplified example, let us consider a world with only two websites that sell a certain item. Let us furthermore assume that Site A is 10% easier to shop at than Site B. If a person finds both sites in a search engine, then where will that person end up buying? Site A will probably win in many more than 10% of the cases. Further, let's say that some shoppers make an initial purchase from both sites. Where will these customers turn for their next purchase? People will be more likely to choose Site A because it is easier to use. Quite likely, Site A could sell 100% more than Site B, even though it was only 10% easier to use.

Although we don't have formal data to prove this hypothesis, the popularity of Amazon.com does tend to support our analysis: once people have experienced how easy it is to shop at Amazon, they are unlikely to buy books and CDs anywhere else. In fact, our own website supplies proof of this statement: the Web page for Jakob Nielsen's book *Designing Web Usability: The Practice of Simplicity* provides links to two online bookstores where people can buy the book: Amazon and Fatbrain. For several months, the book sold at a 20% discount at Amazon and a 30% discount at Fatbrain. Even though these two discount levels were clearly listed on the page where the links appeared, the vast majority of people chose to follow the link to

Amazon and buy the book there. It was not worth their time as busy Internet professionals to figure out a different user interface simply to save \$4.50.

A second explanation for why usability increases sales is related to trust. A site that is easier to use sends the message that the company behind the site cares about its customers and has a commitment to good customer service. If it is easy to find the product the shopper wants to buy, and if the product description is easy to understand and answers all the person's questions, then he or she may believe that the company is likely to deliver the goods as promised and that the shipment will be in good shape and arrive on time. People may also assume that the ease of shopping indicates that getting support or other help would be easy too. Such user predictions are more emotional than logical, because there is no reason to expect that a company that has a high-quality Web design should necessarily have a high-quality fulfillment department or a responsive support center. But people are quite likely to transfer their impression of the quality of the user experience onto their expectations for other aspects of the customer relationship.

Results of Our Usability Study of E-Commerce Sites

We have derived a set of 207 design guidelines for creating a good e-commerce user experience. These guidelines are based on our empirical observations of 64 users shopping on 20 e-commerce sites chosen to represent a wide variety of product categories. We started out observing which elements of the various sites worked and which caused usability problems. Often parts of the designs were so bad that they completely prevented users from being able to complete purchases. We then generalized our findings into recommendations that apply to all e-commerce sites and not just the specific sites where we observed the individual interaction episodes.

The standard approach to developing user interface design guidelines is: first test a range of designs and then generalize the findings. You can use the same approach to develop more detailed design guidelines for your own site or even to perform a competitive analysis with a group of sites that sell a certain type of products or services to find the best-of-breed features. See “Developing Internal Design Guidelines” later in this report.

Success Rates

Across all the tests we conducted for this project, we observed a total of 496 attempts by users to perform tasks on e-commerce sites. The users succeeded in accomplishing the tasks in 278 cases, for a success rate of 56%.

The tasks involved three different activities related to shopping on the Web:

1. Finding and buying a specific product
2. Finding and buying a product that solved a stated need (leaving the choice of the specific product up to the user)
3. Getting customer service.

Thus, our definition of shopping includes:

- Product research
- The process of looking for products
- The actual buying procedures (typically performed through a checkout process)
- Customer service related to the fulfillment of the sale.

We did not study post-sales customer support, such as helping a customer operate a malfunctioning product. For a complete list of the tasks in our study, see our Methodology report.

Success rates are the simplest of all usability metrics and simply indicate the proportion of times users were successful in completing the task they were trying to perform. For more information about success rates, see Nielsen's February 2001 *Alertbox* column on the topic, listed in the References section.

There are several ways of analyzing a success rate of 56%. At first, it may seem rather depressing that users were successful only slightly more than half the time. True, this means that the e-commerce sites we tested lost a huge amount of sales simply because it was impossible for users to shop. Because Web shoppers are not a captive audience (unlike the users in our test), this lack of usability would likely cause more lost sales than the 44% failure rate implies, because real shoppers would be much more likely to leave a difficult site. Many users would abandon a site early just because it was too unpleasant to stay. Many other users, however, would choose to shop on sites that were more familiar or easier to use.

It is sad to report this, but a 56% success rate is actually one of the better outcomes ever seen in a major usability study of the Web. Most other studies find success rates of less than 50%. In other words, on average, people fail when attempting to do something new on the Web. The only reason the Web survives despite this dismal statistic is that people do *not* spend most of their time attempting new tasks on new sites. People are quite aware of the difficulty of using new sites, so they spend most of their time on sites that have above-average usability and where they have been successful in the past. Because of this behavior, having great usability is one of the best ways to attract and keep a loyal customer base.

Why do e-commerce sites have better usability than most other websites? We believe that the answer lies in the accountability for the design: for most non-commerce sites, top management has no way of knowing that their design is a failure. Thus, design teams are often rewarded for glamorous designs that do not work but that look great in demos. In contrast, e-commerce sites live and die by a very simple metric: how much did we sell today? If you add a splash page to the site and sales go down, you immediately know that was a bad idea. Improve the search engine and watch sales go up. (If sales decline, then the "improved" search is no good and has to go — but a non-commerce site rarely makes such tough calls after spending a fortune on new technology.)

Comparison With Other E-Commerce Studies

We know of three other studies of e-commerce sites that were carried out in 2000. Here is a comparison of the success rates measured in the various studies (each of which is cited in our Reference section):

Success Rates by Study	
Studies Conducted in 2000	Success Rate
Marty Jerome	67%
Aamir Rehman	57%
Nielsen Norman Group	56%
Randy K. Souza:	35%
Average Rate:	54%

The two most likely explanations for the difference in success rates are that each study tested different sites and asked users to perform different tasks. Naturally, the more elaborate the task, the less likely users are to succeed (not because users are stupid, but because complex tasks tend to increase complexity in the interface). It will almost always be easier to buy the latest Steven King novel than to buy a set of dining room furniture.

Marty Jerome mainly tested the biggest and most accomplished e-commerce sites, and as noted in the “Scorecard” section below, best-selling websites tend to follow more of our design guidelines than sites that sell less. So there is a selection bias inherent in studies of big sites: they tend to get high usability scores, because having good usability is the way the sites got to be big in the first place. This selection bias is understandable and acceptable in the case of Jerome’s project, which was aimed at providing shopping advice to consumers. Of course, consumers prefer to shop at the best sites, so those sites are the ones to include in this type of study.

The study described by Souza has a methodological oddity that may explain its relatively low success rate. In that study, users were handed a certain amount of money and told that they could keep all the money that they did not spend while shopping on the e-commerce sites being tested. In one way, this approach could be said to simulate real shopping, when people certainly get to keep any money they don’t spend. But in terms of usability testing, the potential for an unexpected windfall of cash probably serves as a powerful deterrent to buying and could be the cause of the particularly low success rate in the study.

Because success rates depend on the chosen sites and the chosen tasks, there is no way for us to determine the true average success rate for all e-shopping unless we measured all sites on the Internet using the same methodology. Based on the above table, however, it seems fair to conclude that the success rate for e-commerce is probably slightly higher than 50%. As long as we are interested in measuring relative improvements in usability, we believe that a success rate of 54% is a reasonable baseline from which to start.

Usability Success Rates and Abandoned Shopping Carts

Estimates of abandoned shopping carts on e-commerce sites ranged from 65% to 80% in year 2000. In other words, people complete purchases only between 20% and 35% of the time, even after they have placed something in their shopping carts. How do these low numbers compare with our estimates of usability success rates of somewhat more than 50%?

Both statistics can be true. The success rate indicates users' *ability* to buy, not whether they will actually end up doing so on any individual website. In fact, people often shop on multiple sites simultaneously. Assuming that several of these sites have decent usability, shoppers will succeed in finding a product that satisfies their need on more than one site. Ultimately, however, most people will buy only one of those products. So several sites can count a product placed in the shopping cart even though only one site ends up closing the sale. Because of this behavior, we will probably always see a small percentage of abandoned shopping carts, even on sites that have maximized their usability. In the short term, however, sites have many opportunities to make this metric go down, and it's definitely a danger sign if the number of abandoned carts goes up.

There are several reasons people place items in a shopping cart without buying:

- As just noted, people often do comparison shopping.
- Even while people are shopping on a single site, they often use the shopping cart as a glorified bookmark mechanism simply to gather products they are contemplating buying. People know that most sites are hard to navigate, so they fear that they will not be able to find their way back to a potential purchase unless they capture it in the shopping cart.
- Most sites have very poor support for comparison shopping: to compensate, shoppers often employ the strategy of placing multiple products in the shopping cart in order to compare them there.
- On sites that make it hard to discover shipping and handling costs, users often place items in the shopping cart simply to find out how much they will have to pay.
- The shopping cart may become abandoned because a site with bleeding-edge features crashes the user's browser or because the user is interrupted during shopping.

Several factors affect whether a shopper will buy from a specific e-commerce site:

1. The site's usability failure rate provides the first hurdle: if someone can't find the product, or if the product description does not answer that person's questions, then they definitely will not buy on that site.
2. Price and the site's credibility and brand reputation form the second hurdle: if multiple sites can supply the shopper's needs, he or she will prefer sites with cheaper products and sites that seem trustworthy enough to deliver the purchase and not cheat their customers.
3. Finally, many additional usability factors help determine which site gets the buyer's money in the end: Which site has the easiest checkout process? Which site has a trustworthy design that makes people feel comfortable entering their credit card number?

International Success Rates

All 20 e-commerce sites in our study were English-language sites. The majority of the sites were based in the United States; one site was based in the United Kingdom. So it should come as no surprise that European test users encountered substantially more usability problems than our American test users. The success rates were as follows:

Comparative Success Rates	
US users:	61%
European users:	47%
(These rates were observed in this study.)	

The 14% lower success rates for European users occurred even though we recruited only test users who could read English. If we had tested people with lesser English-language skills, the results would have been abysmal.

It is very common in usability studies to see lower success rates for international users, that is, users who are from a different country than the one where the website was designed. In early 2001, Nua Internet Surveys (www.nua.ie) estimated that the total number of Internet users in the world was 407 million, of which 167 million were in the United States and Canada. Thus, 59% of the potential users are “international” as far as US websites are concerned. (This analysis assumes that Canadians don’t have any special problems shopping on American sites; something that is not completely true.) Websites based in other parts of the world have an even greater proportion of their potential customers based outside their own country.

In a recently completed Nielsen Norman Group competitive website study of three content sites, the effect of a foreign-language interface was clearly found to be detrimental. We tested three different US-based content sites in the United States, Germany, and France. Interestingly, all three companies had made some attempt at localization, so the designs tested in Germany and France were partly translated into the appropriate local language. Averaged across the three sites, the success rates in the study were as follows:

Success Rates by Country	
United States	42%
Germany	15%
France	14%
(These rates were observed in a different NN/g study.)	

International users have much greater difficulty with websites than domestic users for several reasons:

1. **Translation is extra work for the user.** Using a foreign language imposes an added cognitive burden that distracts users from devoting their full attention to problem solving.

2. **Translated sites are not necessarily intelligible.** Even when a site has been localized, the translation is often done poorly and without understanding of the usability issues inherent in choosing vocabulary for an interactive environment, as opposed to a printed publication. For example, in our e-commerce user experience study, Danish users did not understand phrases like “Under the hood” and “Around the house” used to designate navigation elements for automotive and home products on the Sears website.
3. **Localization is not all about language.** Cultural differences and other differences in the way people approach a given problem make it harder for non-native users to match the interface to their needs.
4. **Forms can work against users in other countries.** Websites often blatantly ignore international users; for example, it is common for forms to refuse a mailing address that does not include a state.

E-Commerce sites are losing many local potential customers because of bad usability, but usability problems hurt sites much more in terms of lost international sales. The effect of international usability issues probably isn't fully felt on most sites yet, because they still spend relatively little to attract those foreign visitors. Companies would be well advised to fix those problems before spending that advertising money, however.

The Web is getting progressively more world wide every year, so the issues relating to international usability will only grow more serious unless Web developers start planning for international users and conducting international usability studies.

E-Commerce Design Guidelines: Some Examples

We have derived a set of guidelines for making the e-commerce user experience more usable, which are presented in our *E-Commerce User Experience* report series. During a design project, it would be best to read all the guidelines and use the complete list as a checklist for the quality of the site. (We have provided this list in the collected and bound version of this report series.) To give you an idea of the type of advice contained in the guidelines, here is a short discussion of a few of them.

Search

Search is an area of e-commerce design that ideally could exceed the capabilities of real people in physical stores, in terms of speed, accessibility, and comprehensiveness. In reality, search is one of the most common and least successful ways that people look for things on the Web. Search is often as bad as the worst salesperson or customer service representative. Unfortunately, shoppers can't ask to speak to search's manager, although we've often seen users go to outside search engines such as Google when they aren't successful using a site's own search engine. From previous experience, people know that Google works and finds good answers, so they waste no time in struggling with an internal search engine that returns junk hits. Of course, as soon as visitors leave for Google, they may also decide to take their shopping elsewhere. (Disclosure: Jakob Nielsen serves on Google's advisory board.)

Design Guideline: Support search for non-product terms.

Make sure your search engine can address non-product needs that shoppers have, such as customer service topics. In physical stores, good customer service representatives and salespeople can easily help people find the gift registry and help them return items or make payments. In contrast, none of the websites we tested appeared to support non-product searches for items like “payment,” “price protection,” and “returns.” This lack was more than an annoyance; the user who entered “payment” had selected an item and couldn’t get past the product page to check out. The search engine returned a “No products found” message. It’s hard to imagine how a store could be so bad that a salesperson would tell a customer looking for the checkout counter: “Sorry, we don’t carry checkout counters.”

Design Guideline: Tell customers what you don’t have.

A salesperson in a store generally tells you if the store doesn’t carry something you’re looking for. Web search engines unfortunately often tell you nothing in this situation. When a search returns no hits, people struggle to understand what that non-result means. Does the site really not have the item? Do they call it something else? Did I misspell the name?

Very few websites tell you when they *don’t* carry an item. But it is very common to see users work hard to interpret empty search results. On CustomDisc, one user searched for “elvis” and got a hit on “Melvis/The Megatones.” The user typed “presley” and got a hit on a band named Presley. The user typed “elvis presley” and didn’t get any hits. At this point, the user gave up. What the user didn’t know — and the search results didn’t explain — was that copyright restrictions prevented CustomDisc from selling Elvis Presley songs. Although CustomDisc explained these restrictions in Help, a better place to provide this information would have been on the no-results page, shown whenever search found nothing that matched the user’s query.

Can't Find a Song?

Most songs are owned by an artist or record label. If they choose not to participate in our CustomDisc service, then we cannot legally sell their music. However, we're constantly expanding our roster of artists and record labels, so you may want to subscribe to [our newsletter](#) for updates on new music.

You may not find every song you want. But you'll probably find more than you planned. With over 200,000 songs available for your disc, browsing CustomDisc is your best bet.

[Back to the Help Index](#)

CustomDisc showed the right information in the wrong place. This message (or something shorter) should have been shown whenever searches for songs and artists failed. H1








Side-by-Side Comparisons








People like to comparison shop. Nothing excites shoppers more than getting the best deal, whether they've got \$10 or \$10,000 to spend. In many studies, again and again we've heard users ask for ways to compare items side by side. Without comparison tools on websites, users must drill down to get information on a product, grasp the most important details and either remember them or print them out; back up, find another item, and start the process again. Often users can't remember key features of one product once they've gotten to another, so they're forced to compare based only on what they do remember.

Advanced Web users create their own solutions. We've seen these users open multiple browser windows and tile them so they can see more than one product at once. This window jockeying wasn't enjoyable for these users, however, and it can lead to closing the window that controls the shopping cart accidentally. Users resented having to invent their own comparison solutions and instead wanted the site to support what they wanted to do. The most successful sites we've seen provide tools to compare products.

Design Guideline: Design comparison tables to highlight differences.

Comparison tables work best when they offer a snapshot view that clearly shows what's different about the products being compared. "Snapshot" implies that you can see the maximum amount of information at once, without a great deal of scrolling. Image H2 shows a comparison table that users generally liked at HermanMiller.

	Work Chairs						
							
	Aeron	Equa 2	Ergon 3	Equa 1	Ambi	Reaction	Avian
Base Price	\$749.00	\$479.00	\$449.00	\$364.00	\$349.00	\$363.30	\$225.00
Adj. Arms	Yes	Available	Available	No	Available	Available	No
Adj. Back Height	No	No	Yes	No	Yes	Yes	No
Adj. Lumbar Support	Yes	Yes	No	No	No	No	No
Adj. Seat Depth	No	No	No	No	No	Yes	No
Adj. Tilt Tension	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forward Tilt Angle	Yes	No	No	No	No	Available	No
Tilt Lock	Yes	No	Yes	No	Yes	Yes	No
Pneumatic Lift	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12 Year Warranty	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Side Chairs						
							
	Aeron	Equa 2	Equa 1	Ambi	Avian	Aside	Limeric
Base Price	\$433.12	\$253.25	\$247.43	\$240.63	\$187.97	\$164.00	\$66.00
Sled Base	Yes	Yes	Yes	Yes	Yes	No	Yes
Stackable	No	No	No	No	No	5 High	10 High
Chair Weight	35 lbs.	37 lbs.	34 lbs.	32 lbs.	30 lbs.	18 lbs.	13 lbs.
Work Chair Available	Yes	Yes	Yes	Yes	Yes	No	No
12 Year Warranty	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Users liked the concept of this table but didn't like the horizontal scrolling or the table wasting row space on a feature all chairs had. H2

This table has two main drawbacks: in several rows, every chair has that feature marked "yes." Seeing that all HermanMiller chairs have a certain feature does not help users assess what's different about a particular chair in order to choose one. Users liked seeing all the chairs in one place but disliked scrolling horizontally, because then they could no longer see the row headings. In general, users have difficulty with horizontal scrolling, so it's best to design pages no wider than a monitor set to 800 x 600 resolution can display.

The type and format of the feature information among products in a comparison tool needs to be the same, or it's meaningless to compare. We found that users need to be able to determine whether a feature listed in one product exists in another, or else they're left wondering whether it doesn't exist or just wasn't mentioned in the feature list.

Winnowing

Although abundant selection makes Web users feel powerful and in control, filtering through the good and the bad can overwhelm them if they don't get any help from the website. In physical stores, good salespeople listen to what their customers need and then show a selection of the stock that meets the criteria. Similarly, when you have a lot of products or content on your website, you need to provide ways for your customers to narrow down the choices. We saw an interesting behavior in our study: no matter how websites displayed their product listings — with small, big, or no graphics, short, long or no descriptions — users stopped looking at product listings after two or three pages, and sometimes they didn't even look past the first page. So if you have a large number of products, you need to help your customers narrow the selection to a list that fits on two or three pages. We use the ancient term “winnowing,” which originally meant to separate wheat from the chaff, to refer to this filtering process.

Design Guideline: Allow winnowing by the most useful differentiating factors for that type of product.

In order to make winnowing tools that work, you must understand how your users want to see subsets of your product. For example, many people in our study who had to buy toys for children wanted to search by age of the child. Winnowing tools that narrowed toys down by school year or groupings like “infant” or “youth” were perplexing for people who didn't know which ages those terms refer to. Some specific examples of most useful differentiating factors for winnowing are filtering toys by age of child and clothing by size (showing only what's in stock for your size, because you wouldn't change sizes to get an in-stock item).

Design Guideline: Pick winnowing criteria your customers understand.

Peet's, a coffee and tea site, offers a winnowing tool that asks shoppers five questions and then recommends a coffee for them (see Image H3). Unfortunately, our test users didn't understand the flavors questions. If preferred flavors are indeed highly relevant to coffee preference, Peet's should explain the questions and answers in more detail or give examples of foods with those flavors.

The screenshot shows the Peet's Coffee & Tea website. At the top, there are navigation links: Store, Roasting, Tasting, and Customer Service. The Peet's logo is on the left. A navigation menu includes 'In Tasting:' with links for 'COFFEE TASTE GUIDE', 'TEA TASTE GUIDE', 'COFFEE BREWING', and 'TEA BREWING'. A shopping cart icon shows '3 Items' and a 'CHECKOUT' button. The main content area is titled 'Coffee Taste Guide' and contains the following text and form elements:

Use our guide to find the coffees that best suit your tastes. Below each question, click the answer or answers that are closest to what you think. When you're done, click SUBMIT.

Please note: Because taste is highly subjective, answers from our Taste Guide should be considered best recommendations, rather than exact matches.

For additional help choosing a coffee, see our [Customer Reviews](#) or [Employee Reviews](#).

Have you tried Peet's coffee before?

Yes
 No

What time of day will you drink this coffee?

Morning
 Afternoon
 Evening

What kinds of food flavors do you prefer?

Mild
 Medium
 Strong

What flavors appeal to you most?

winey, fruity
 smooth, earthy, nutty
 sparkling, citrusy, lively

This winnowing tool from Peet's worked reasonably well to help users choose the type of coffee they might like. They were confused, however, by the questions about flavors. H3

In addition to being able to narrow a set of choices, an optimal design would also allow users to broaden their choices in desired directions. Selective broadening is particularly important when the user has narrowed the choices too much. It is very frustrating to go directly from 100 choices to one or two (or none!) without an opportunity to back up a little and get, maybe, 10 choices.

Help Users Feel in Control

Here is the most important design principle of them all: if you increase the users' sense of being in control while they are visiting your site, they will feel good about your site and will enjoy their visits. Even better, you will enhance users' control of their overall Web experience, because they will likely abandon your competitors' sites where they feel powerless in contrast with your more supportive and flexible site.

Scorecard: How Sites Comply With Usability Guidelines

After we developed the 207 design guidelines for e-commerce user experience, we scored 20 e-commerce sites for their degree of compliance with the guidelines. These other 20 sites were different than the 20 sites we tested in the original usability study, because of course if we had scored the same sites as we had used to derive the guidelines, we would have been pursuing a circular argument.

We chose these other 20 sites to include 10 best-selling e-commerce sites and 10 medium-selling sites in the same businesses as the 10 big sites. The 10 best-selling websites were chosen from a list of the 20 best-selling sites among American home users. We avoided sites that were included in our original usability study and limited the choice to only two from any given product category. For the purpose of this scorecard comparison, we decided to treat Amazon as a general store and not as a bookseller. Thus, we paired Amazon (big seller) with Kmart (medium seller, as far as Web sales were concerned). We did not score any small e-commerce sites, although we included some in our usability study.

The results of the scorecard are shown in the tables below. The easy first conclusion is that Amazon.com is indeed the best e-commerce site: at 72%, it scores much higher than any of the other sites we analyzed. In other words, Amazon has reached its stature as the Web's leading retailer, not because it is named after a river, but because it is the easiest place to shop.

Second, even Amazon does not have perfect usability, but it does come pretty close. Following 72% of our guidelines is almost as good as most sites need to be. Optimal usability would typically be reached by complying with about 90% of the guidelines, because any given website will have good reasons to deviate from a few of the guidelines. All of the guidelines are good advice in general, but in specific instances some of them may not apply, and a site may be better off with a design that accommodates the special needs of its users and their tasks. We do recommend, however, that a site deviate from a guideline only after a user test confirms that a deviant design does indeed provide better usability under that site's own special circumstances (users, tasks, and product categories).

Big Sites' Guideline Compliance	
Amazon	72%
MotherNature	60%
CDNOW	60%
Barnes&Noble (bn.com)	55%
Gateway	51%
Pets	49%
drugstore	48%
VictoriasSecret	47%
PlanetRx	45%
ticketmaster	39%
Average	53%

Medium Sites' Guideline Compliance	
AlphaCraze	45%
HardwareStreet	41%
Kmart (bluelight.com)	41%
Healthshop	41%
CDconnection	40%
PetfoodExpress	39%
Sav-OnDrugs	38%
VermontLingerie	34%
TicketWeb	26%
MediChest	25%
Average	37%

It is clear from these scores that the big sites have substantially better usability than the medium-sized sites. This difference is a great indication of the value of usability to drive sales.

Of course, having good usability and a famous name will not save an e-commerce site if it does not have a sustainable business model. Pets.com is a good example of this problem: it got a fairly good rating in our scorecard analysis and the company still died a few days after we had collected the data. All usability can do is to increase the sales of a site. If the site loses money on every sale, then even the best usability will do it no good.

These scores also show that the state of usability in e-commerce is appalling. Setting aside Amazon, we see that even big and famous sites follow only half of the usability guidelines. Medium-sized sites follow only a third of the guidelines. We have not dared score small-business sites, but they would probably get an even lower score.

Three conclusions:

- **Common sense is not yet common practice.** Even though many of the design guidelines might seem obvious to some, we still have a long way to go before good usability is truly the state-of-the-art on the Internet. Our guidelines may describe *best* practices, but they don't describe *common* practices, because most sites don't follow most of the guidelines.
- **The degrees of compliance and rates of success are suspiciously similar.** The low average rate of compliance with the design guidelines goes a long way toward explaining why usability studies of e-commerce sites usually find a success rate of around 50%. Any way you look at it, people are incapable of buying what they came for about half of the time.
- **Becoming one of the most usable sites on the net is still pretty easy.** Following only half of our guidelines would be sufficient to place a site in very good company and make it one of the best on the Internet. Following three-fourths of the guidelines would make a site a true top scorer.

The next table looks at the compliance scores for each of the different design topics covered in our project. The table is sorted by the difference in scores between the big sites and the medium sites. In other words, the first entries in the table indicate the biggest differentiators — areas in which the big sites perform substantially better than the medium sites.

Compliance with Usability Guidelines by Design Aspect			
Aspect of Site	Big Sites	Small Sites	Difference
Category Pages	51%	28%	23%
Selling Strategies	63%	44%	19%
Product Pages	63%	45%	18%
Search	42%	27%	16%
International Users	30%	15%	15%
Trust	61%	50%	11%
Checkout & Registration	59%	51%	8%

It is interesting to note from the table that all the sites score relatively well on the Checkout & Registration guidelines. Most likely, the intense scrutiny of shopping cart design in the trade press (where the “abandoned shopping cart” problem was seen as the most prominent indicator of e-commerce trouble) accounts for this similarity in scores. Another possible explanation is that the shopping cart is the easiest part of an e-commerce site to get from somewhere else and have it still work on your site.

It is also clear from the table that international users are neglected on virtually all sites, even the biggest ones. Again, increasing website usability for people who don't speak your site's language natively is one of the greatest opportunities for e-commerce sites to increase their sales.

Another big opportunity to improve sales is in helping people quickly find what they want in the online catalog. The biggest differentiator between sites that sell a lot and sites that sell less turns out to be the usability of their category pages. Category pages are mid-level pages in an e-commerce website that help customers find the product listing pages — and thus, the products they want to buy. See our Category Pages report for in-depth information about these critical-path elements in e-commerce transactions. This area of e-commerce usability is closely related to the site's ability to help users locate the products they want, both in terms of facilitating navigation and in terms of differentiating the products and allowing users to target a small number of promising offers. One of the main reasons users are less attracted by the medium-selling sites could well be that those sites seem more confusing and overwhelming, whereas the big sites seem more helpful because of their better category pages.

Nielsen Norman Group can deliver a scorecard that measures your sites' compliance with the e-commerce design guidelines, both as an overall metric and relative to each of the usability aspects covered by the guidelines. For more information, please see www.nngroup.com/services/scorecard

Using Guidelines to Improve Design

As you read the findings from our usability tests of 20 different e-commerce sites, you will probably often say, “but that's common sense.” Well, common sense seems to be less common than one might think, because every single design blooper that we found was on a professional website designed by people who wanted to sell. You can be sure that the designers were not interested in being featured in a usability report as examples of bad Web design.

We agree that many usability problems represent violations of simple principles like our design guidelines. Many of the worst types of problems could be prevented by a guidelines review in which the designer looks through the checklist of usability guidelines to see whether the design complies or not.

Usually, the designers themselves perform guidelines reviews, and a design certainly benefits if all designers familiarize themselves with the usability guidelines before starting an e-commerce project. It is best to have at least one review performed by somebody who is not connected with the project, however. Most usability methods work better if they are tightly integrated with the design project and performed by the company's own staff. After all, your own people know your business, your product line, and (you hope) your customers better than anybody else. Usability reviews, however, benefit from an independent approach by somebody who does not know that “this is how it's always done around here.”

Multiple Levels of Guidelines

In designing your own website, you should follow three levels of guidelines:

1. General usability guidelines that would apply to any design.
2. Domain-specific usability guidelines that apply to the type of site you are designing.
3. Company-specific usability guidelines that apply to your individual site and depend on the exact products and services you offer.

General usability guidelines can be found in many other publications. For Web design, we recommend *Designing Web Usability: The Practice of Simplicity*, by Jakob Nielsen, but there are many others (see the References section for details about this book and other literature mentioned in this report).

This series of e-commerce design guidelines is intended to supply the middle set of guidelines. Even though some of the guidelines apply to other forms of sites, one would need a different set of domain-specific guidelines for the design of, say, a newspaper site, a government site, or a big-company intranet. The present guidelines apply to sites that are mainly intended as online retailers. Other forms of Internet-based sales may be sufficiently similar to online retailers that they can use many of the guidelines. For example, we have been engaged in usability projects for online wholesalers, online leasing companies, and financial services companies, and we found that their sites do benefit from many, although not all, of these guidelines.

B2B Guidelines

Design guidelines written by others will take you part of the way. To truly empower your specific customers requires a deep understanding of their needs and behavior, which differ from industry to industry. Even so, we have found a surprising amount of overlap between very different types of users, whether business professionals shopping for highly complex B2B (Business to Business) products or consumers shopping for mass-market B2C (Business to Consumer) products.

This set of e-commerce user experience guidelines is most comprehensive for B2C sites because those were the ones we tested when developing the guidelines. Most of the guidelines also apply to B2B sites, partly because the users and their general behavior are highly overlapping: often the same person is a “B” from 9–5 and a “C” in the evening. Because business users often have tried shopping at the best consumer sites, their expectations for e-commerce usability have been set based on their user experience at those sites.

Indeed, when testing B2B sites, we often hear complaints such as: “If I can get this good service from Amazon.com when buying a \$5 paperback, then why can’t I get equally good service when buying \$50,000 worth of stainless steel valves?”

On today’s Internet, the bar for usability is not being set by your immediate competitors in your own industry but by the very best sites on the entire Web. This comparison may seem unfair, but it’s the truth. Thus, B2B sites are strongly advised to consider all of the B2C design guidelines and implement them to the extent that they apply to their sites.

B2B sites require additional usability effort in order to support complex products and group purchasing processes. On a B2C site, it is usually the same person who is using the site, deciding on the purchase, approving the expense, and arranging for payment. In a B2B scenario, several employees at various levels of the

organization (and working in different departments) may be involved in a single purchase. Many B2B sites currently provide much too little support for this multi-user process.

Because B2B products and services can be highly complex and often are very expensive, it is also often necessary for a B2B site to provide much more substantial product information than a typical B2C site offers. Customer support and service also become much more important. The specific requirements for these elements often differ among industries, so we recommend that you develop your own internal usability guidelines for the best way of presenting your type of products in an interactive selling environment.

Developing Internal Design Guidelines

To develop your own company-specific guidelines, you can use a variant of the approach we used to develop the general e-commerce guidelines, as documented in our Methodology report. Select a number of e-commerce sites that sell the same type of product as you do and test a number of your customers as they shop on those sites. You should include your own site in this study. During the tests, note which elements of the various sites help or hinder users and then generalize these observations to form the guidelines.

In selecting test users, decide whether to test only current customers or to include potential new customers. We usually favor including some people in the test who have never done business with the company. Testing with only current customers often shows a bias in favor of the site that would mask some of the important barriers to becoming a customer in the first place. Many websites are incredibly opaque to new visitors who don't know anything about the company or its products.

It cost Nielsen Norman Group a quarter million dollars to develop and publish the design guidelines for *E-Commerce User Experience*. Some guidelines projects are even more expensive: it is not publicly known how much Apple Computer spent developing the *Macintosh Human Interface Guidelines*, but we would estimate the cost at several million dollars spent over many years and several editions. The same would be true for the *Microsoft Windows User Experience* guidelines.

Most companies can develop their own guidelines on a much smaller budget. Company-specific guidelines should be incremental rather than comprehensive. There is no need for you to replicate the research to develop general usability guidelines for e-commerce user experience design. Instead, you can just incorporate our design guidelines into your own by reference. Basically, you say that your designers should follow the general guidelines plus a smaller number of industry-specific guidelines in your own document.

Here are several other ways your guidelines project can be cheaper than ours:

- **Use fewer sites.** It is not necessary for you to test 20 websites. Instead pick 3–5 sites in your own industry to get sufficient coverage of the main issues.
- **Test locally.** Even though it is always best to consider international users, it is often possible to get most of the industry-specific findings from a domestic study, thus saving the cost of running tests in other countries.
- **Use fewer experts.** Our team has more than 50 years' combined experience in the usability field and 22 years' combined experience with Web usability. This level of expertise may be necessary to derive the deep insights one wants for a general set of design guidelines, but it is somewhat easier to derive more specific guidelines; thus a smaller and less senior staff will often suffice. It is usually important to include a person with substantial domain expertise in the guidelines team, so that is one area in which domain-specific teams will face a small added expense.
- **Take less time.** Because our guidelines are intended as the foundation for all e-commerce designs in the future, we were very thorough in developing the guidelines and in making sure that our analysis would hold up. Each guideline was subjected to extensive analysis by a large team of senior usability authorities. Of course you also want your own set of guidelines to be correct, but it is possible to move faster with an internal set of guidelines, because it is easier to correct any mistakes that may be discovered after the initial release of the draft guidelines to your design teams.
- **Be more concise.** Our final guidelines span about 400 pages of content, including extensive examples, commentary, and methodology reporting. We constantly attempted to reduce the material, but we wanted to cover the entire field of e-commerce design, so we needed to be comprehensive. Specific guidelines for use inside your own company should be written much more tightly: 50 pages would be a good limit.
- **Use less polish.** Our reports went through several rounds of editing and graphic design to improve the language and appearance for professional publication. Internal reports can cut some corners there, even though any publication should have one round of editing.

You can develop your own guidelines using the approach described here and in our Methodology report. It is possible to get assistance from an outside firm to develop domain-specific or company-specific design guidelines. The most cost-effective approach is for the consultant to review a draft of the guidelines after you have developed them yourselves, but you can also outsource all or part of the complete process, including the initial competitive usability study of multiple sites in your industry.

Cost of Usability

Given that improved usability can often double the sales of an e-commerce site, how much does it cost to make a website easier to use? There is no simple answer, but here are some ways of assessing the cost of usability.

Today's Best Practices

In late 2000 and early 2001, Nielsen Norman Group collected information on the usability budgets for approximately 1000 companies that participated in our usability conferences. The sample was obviously biased, because only companies with a significant interest in usability would invest in sending staff to a high-level usability conference. However, exactly *because* we had a biased sample, our survey represents current best practices in the field of usability.

According to our survey respondents, companies spent an average of 10% of their design and development budgets on usability. Obviously, the average investment in usability across all Web design projects in the world would be much lower, because the vast majority of projects currently have no usability at all, but place their faith in the designers' best guesses as to what users need. For well-run design projects with a commitment to usability, however, 10% of the budget is a reasonable goal in 2001.

Past and Future Expenditures

The outcome of our 2001 survey can be compared with a similar survey Jakob Nielsen conducted in early 1993 of leading software development companies and their usability practices (see the References section). That survey, which also used a biased sample of companies with a high commitment to interface quality, found that the average project allocated 6% of its budget to usability. So the change from software design to Web design and the increased demand for interface quality over the last eight years has increased the recommended proportion of project costs that goes to usability from 6% to 10%.

We predict that investments in usability will continue to increase for four reasons:

- **Competition.** Increased competition on the Internet will lead to increased requirements for usability: people will simply refuse to use any sites that are not as easy as the very best sites on the Web.
- **Return on investment.** It will become more widely recognized that the return on investment from usability is much bigger than for almost any other investments that can be made in Internet projects. We are nowhere near the point of diminishing returns, so sites that invest more in usability will become easier to use and will sell more.
- **Changing audience.** As the Internet continues to grow, it will reach many more users, and these users will have less computer and Web experience than today's users do. The early adopters were technically savvy; the late adopters will need dramatically improved usability or they will not be able to use the Web at all.
- **Internationalization.** The Web will also become increasingly multilingual, with a majority of users who do not speak English, leading to an increased demand for international usability assessment.

The cost of individual usability activities varies widely, from a few thousand dollars for a fast test carried out by your own staff to a million dollars or more for big studies with multiple rounds of testing carried out in many countries on several continents.

In the long run, the most economical way to integrate usability into your company is to train your own staff in usability methodology. Luckily, the simplest usability methods are very easy to learn. For example, we run a three-day course called “Learning-by-Doing” that teaches user testing in the context of using the seminar sponsor’s own Web project as the case study for a complete usability study: Day 1 is spent planning the test; on Day 2 we test the site with several test users; Day 3 is devoted to analyzing the data and recommending changes to the site.

Incidentally, the fact that this three-day seminar includes a complete user test is proof that it is possible to run a test in that amount of time and get good data that will lead to many improvements in a design.

So, there is no excuse for not testing the design before releasing an e-commerce site. It can be done in three days. Even the wildest rush to market can wait that long in order to launch a high-quality site.

Even the simplest usability test uncovers a large number of usability deficiencies in a design. Some companies might avoid testing because they feel an obligation to fix every problem found, which usually isn’t possible in the available time. A more fruitful approach is to proceed with usability testing, while acknowledging that some problems may be too time consuming to fix within the current project. It is still better to know about such issues, because they can be placed on the agenda for the next release. Also, it is better to manage the project based on knowledge of the real situation. It may be a tough call to release a design that contains known weaknesses; still, it’s better to know about these weaknesses and their usability impact in advance. One of the outcomes of a usability study is insight into the severity of each of the usability problems, which allows project management to make the necessary trade-offs and fix most of the worst issues while deferring less serious issues for a later release.

There are many usability methods besides user testing, including field studies and expert reviews. Field studies should be done early in the project to collect data about users’ natural behavior and allow the design to be based on real user needs. Expert reviews can be conducted at any stage. Expert reviews provide an independent, outside assessment of the project and its design as well as a strategic analysis of the site’s usability directions. These more advanced methods can be more expensive than simple user testing, but the best projects use a combination of several methods.

Not all projects need to make use of the full range of usability methods. Some projects have budget for only a few cheap tests. The important thing is that a design informed by usability testing will always be better than a design with no usability influence at all.

Reports in This Series

Executive-Level Report

High-Level Strategy – Written by Jakob Nielsen, this report distills the data from our major international usability study into the essence of e-commerce. Jakob discusses the strategic implications of our findings for the future of e-commerce. This is the report to give to your boss if he or she doesn't have time to read the detailed reports.

In-Depth Reports

Category Pages – Category pages organize and prioritize a site's offerings. Home pages are one type of category page. Some home pages clearly show what the site sells, but others confuse users by obscuring the purpose of the site. Product listing pages can be tricky to design because they must provide the right amount of information and organize it well.

International Users – When US-based sites go global, many aspects of the user experience get broken. This report focuses on not only the obvious issues, such as address formats, but also cultural issues as well. Based on usability tests with 24 European users.

Product Pages – Users need sufficient information about a product before purchasing it online. Product pages provide that information using a combination of text and images. Effective product pages show availability, product options, and total cost. Good images also matter.

Checkout & Registration – Filling out Web forms correctly is very difficult for most users. Forcing people to register during their first purchase is a confusing and frustrating tactic that drives customers away. Better designs mean more customers can complete the shopping process.

Search – Many of our users went right to the site's search tool (unless it was hidden) but there were several reasons search didn't always help them. How to improve search results and search pages in product catalogs.

Selling Strategies – Some sites drive their customers away with high prices, unreasonable shipping costs, or unavailable items. Sites that learn to avoid these problems can then focus on tactics for achieving additional sales through cross-selling, recommendations, and gift-giving.

Trust – Trust is the user's willingness to risk time, money, and personal data on a website. This report discusses many factors that can enhance (or damage) trust in e-commerce sites.

Methodology Report

Methodology – This report details how we conducted this study, including a summary of user demographics, how we briefed and interacted with users, and a summary of all the tasks.

The E-Commerce User Experience reports are for sale separately or as a full-color, hardcover book. For current information about the book and report series, please visit:

www.nngroup.com/reports/ecommerce

www.nngroup.com/reports/ecommerce/license

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The entire team planned the studies and evaluated the results. The studies were conducted and observed by Rolf Molich and Sofie Scheutz (Denmark), and Carolyn Snyder (New Hampshire). Although each report has a primary author, reports were extensively reviewed by all members of the team. We are also indebted to Tom Durkin for editorial assistance, Steven Thomas for design, and Shuli Gilutz for research.

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References

Apple Computer. 1993. *Macintosh Human Interface Guidelines*.

Addison–Wesley.
ISBN 0201622165

Jerome, Marty. December 2000. E-Commerce Showdown. *Ziff Davis Smart Business for the New Economy*. Pages 104–119.

Microsoft Corporation. 1999. *Microsoft Windows User Experience*.

Microsoft Press.
ISBN 0735605661

Nielsen, Jakob. February 18, 2001. Success Rate: The Simplest Usability Metric. *Alertbox*.

<http://www.useit.com/alertbox/20010218.html>

Nielsen, Jakob. 2000. *Designing Web Usability: The Practice of Simplicity*. New Riders. Translated into 13 additional languages. For international titles and ISBN numbers, see

<http://www.useit.com/jakob/webusability>
ISBN 156205810X

Nielsen, Jakob. 1993. *Usability Engineering*. AP Professional.

ISBN 0125184069

Nielsen Norman Group's Scorecard service.

Nielsen Norman Group can deliver a scorecard that measures your site's compliance with the e-commerce design guidelines in this report series.

<http://www.nngroup.com/services/scorecard>

Nua Internet Surveys

<http://www.nua.ie>

Rehman, Aamir. October 2000. Holiday 2000 E-Commerce. *Creative Good Report*.

<http://www.creativegood.com/holiday2000>

Souza, Randy K. October 2000. The Best of Retail Site Design. *The Forrester Report*.

<http://www.forrester.com/ER/Baseline/QuickView/0,1338,10003,FF.html>

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