

HCI & Aesthetics: The Future of User Interface Design

In recent years, studies have been conducted to not only test the usability of computer systems, but also the perceived usability - which relies heavily on the role aesthetics plays in the perceived usefulness of the system. User interface designers need to realize that users' perceptions of interface aesthetics are very closely related to the apparent usability of that interface. This increases the likelihood that aesthetics may considerably affect system acceptability. As usability becomes more mainstream and popular among the top websites, companies need to place more focus on aesthetic appeal to differentiate themselves from other companies. Usability studies should take a broader look at the user experience and ask questions about aesthetic appeal, perceived usability and actual usability. People have a more holistic view of their experience with an interface. Usability experts need to focus some attention on the role aesthetics ultimately plays in the entire user experience.

The study of human-computer interaction and user interface design is fundamentally based in quantifiable usability research. For years, many usability professionals have been planning, conducting and reporting on usability tests and their findings in order to determine how useful a system really is. Usability testing largely tests how successful users are at completing predetermined tasks or finding pieces of information with a computer system. Typically, a usability test will ask questions such as "Could you find that piece of information?" or "Were you able to accomplish the task?" The users are observed and asked to articulate in words exactly what they are able to accomplish.

In recent years, studies have been conducted to not only test the usability of computer systems, but also the perceived usability of the system - which relies heavily on the role aesthetics plays in the perceived usefulness of the system (Tractinsky 1997). Aesthetics is the study of beauty in all forms and expressions. Beauty is represented through material, form, color, arrangement and/or signal. Aesthetic appeal is largely a subjective judgment that is not rooted in any preconceived notion of purpose. Beauty is largely very personal and also very cultural. Virginia Postrel (2003), approaches aesthetics from a cultural and commercial perspective, said in 2003 that the 21st century is the Age of Aesthetics. She believed that aesthetics is an economic driver for differentiation among competing products.

There is an unspoken battle currently raging among those who develop user interfaces. It's the battle between usability experts and graphic designers (Cloninger 2000). On one hand, usability experts believe a user interface should be simple and that tasks should be able to be completed quickly and effectively. On the other hand is the graphic designer who believes the user interface should be visually interesting, aesthetically appealing, unique and also entertaining. The web is just too big for either one of these disciplines to prevail. Some sites need to be artistic and entertaining, while others need to be made as simple and intuitive as possible. The future of user interface design is to create sites that are both easy to use, as well as being visually appealing.

The usability testing which occurs today focuses mainly on the actual usability of the system and not the role aesthetics plays into the perceived and reported usability in determining user satisfaction with an application. Usability tests have not been designed to attempt to assess the aesthetic appeal of an interface, or how that might impact the perceived usability and user satisfaction of an interface. Quite often good characteristics of an application are not even perceived by the users. They are often taken for granted and not even reported on by users. The human perceptual and attentional systems are designed to notice discrepancies, problems and distractions, not that which is expected (Norman 2002). It has been said that the best designs are the

ones which are noticed least. Both extremely attractive things, as well as extremely boring things, can be a distraction. The future suggests a balance. As many experts have said, for everyday applications perception is more important than reality. Perceived usability is important because people will report higher satisfaction with an application based on how aesthetically pleasing the system looks to them. Users will commonly assign positive qualities to systems they believe are physically attractive, known as the long-held belief that what is beautiful is usable – even if the system isn't usable at all (Tractinsky 2000).

Because of this, it is important for usability professionals to understand the important role aesthetics plays. In the future it will be increasingly important to incorporate visually interesting and distinctive elements into computer interfaces in order for the system to not only be easy to use but also to be aesthetically appealing enough to also be perceived as easy to use as well. With many companies now focusing their website on the user experience, it is easy to see how many of these websites are starting to look very similar. By looking at many leading banking websites today and you will see that many of them look remarkably similar. Although consistency and standardization is one of the ten usability heuristics advocated by Jakob Nielsen (2000), a pioneer in website usability, it is ultimately not a good idea if corporate websites all begin to look the same. While consistency and standardization are important elements in user interface design within an application, it should not apply between competing applications.

The usability and aesthetics debate is rooted in one of the oldest debates of our time – form versus function (Tractinsky 2000). Is it better for something to work well, or look good? The tension between form and function has long been at the center of the design debate. The most important aspect of user interface design is the ability to balance these two opposing views, creating user interfaces that are not only easy to use, but that are also being perceived as easy to use. If an interface is easy to use, but perceived otherwise, it will hurt the outcome of any usability testing that is conducted. On the other hand, if an interface is perceived to be

easy to use, but actually isn't easy to use, that will also skew the results of any usability test that is being conducted since people will rate it's usefulness higher than it actually was. The aesthetic-usability effect is a condition where users of a system perceive aesthetically pleasing designs to be more usable than less aesthetically pleasing designs. Since we know this, it is important for these two philosophies to work together in the future to create designs that not only work well, but look good too.

In 1995, Kurosu and Kashimura conducted one of the first experiments ever to study the relationship between users' aesthetic perceptions and their a priori perceptions of a system's usability. Screen layout patterns were tested for an ATM user interface. The results found that apparent usability has a greater correlation with beauty than inherent usability. Basically indicating that people expect things that they think look good to actually work better.

In 1997 Noam Tractinsky from the Department of Information Systems Engineering at Ben-Gurion University of the Negev in Israel duplicated the test conducted by Kurosu and Kashimura but adapted the test for a different cultural setting. His findings replicated previous findings, although one test recorded an even stronger correlation between perceptions of beauty and apparent usability.

Since then, Tractinsky and some of his colleagues have conducted extensive research on the role aesthetics plays in information technology (Tractinsky 2004). Recent research suggests that the visual aesthetics of user interfaces is a strong determinant of users' satisfaction and pleasure. Research stresses the importance of studying the aesthetic aspect of user interface design and its relationship to other design dimensions. The lack of appropriate concepts and measures of aesthetics may severely constrain future research in this area. In 2004, Lavie and Tractinsky conducted studies to develop a measurement instrument for perceived website aesthetics to be used in future studies. They emphasize the differences between "classical" and "expressive" aesthetics. Classical aesthetics relate to many design rules advocated by usability experts. Expressive aesthetics is manifested by the designer's creativity and originality and by the

ability to break design conventions. These two categories can be used with a rating scale in future studies to help assess the levels of usability and aesthetics in a design.

In 2003, Laurie Brady and Christine Phillips conducted an experiment on aesthetics and usability although their experiment looked more closely at the role color and balance play in assessing aesthetic appeal and usability. In general, no statistical difference was found in the user's rated satisfaction, which does support the idea that user satisfaction is related more to successful navigation as opposed to aesthetic appeal. However, the most aesthetically pleasing site ranked significantly higher when users were asked to predict if the site was easy to use. The least aesthetically pleasing site ranked lowest. Further research can be conducted here to determine the role specific design principles play in assessing a site's perceived usability.

A recent study (Grotzinger 2005) was conducted over the usability versus aesthetics debate by students at SAE College, Byron Bay and Middlesex University in London. They created and evaluated two websites for the purpose of this research. One website was developed utilizing usability principles and one was designed utilizing artistic design and aesthetics. They tested and evaluated both websites according to specific criteria. The conclusion was that a variety of design principles, including both usability and aesthetics, is the most efficient approach to user interface design. The study also reiterated the point that a website's success can only be measured against its goals.

The graphic design community is finally getting some major attention in recent years. With the wider use of higher speed internet connections, the graphic-intensive commercial websites they have been creating are getting the spotlight and big clients are finding it increasingly difficult to resist these eye-catching and bold designs. Although graphic design doesn't lend itself well to a list of do's and don't's, it is possible to incorporate test questions that attempt to help measure aesthetics, perceived usability and user satisfaction. Although the web began as a way to share text-based information, it seems naïve to expect it to remain that way.

Usability barely matters to most system users (Norman 2002). As long as the system functions at least at an acceptable level, the first comments from system users will rarely focus on ease-of-use issues. It is often secondary or even tertiary in users' judgments about a system. As long as it is good enough, most people don't really care about usability. More importantly, they seldom base purchase decisions on this dimension. If they want a particular item that only one site sells, they will use the site regardless of how easy-to-use or visually appealing the site is (Tractinsky 2004). The lack of attention paid to usability therefore is somewhat understood. Good usability however is most often invisible, therefore even if the user did have a positive experience they are unlikely to comment on ease-of-use and are more likely to focus on a subjective opinion of the visual design.

As user interface designers, we need to realize that users' perceptions of interface aesthetics are very closely related to the apparent usability of that interface. This increases the likelihood that aesthetics may considerably affect system acceptability. Aesthetics arouses the user's attention, engages the user to use the system and helps to maintain the user's interest. Aesthetics alter the user's perception of usefulness and performance. As many experts have said, attractive things will appear to work better. It is important then to balance aesthetics and usability to ensure user interfaces are not only easy to use, but that they are also visually appealing and interesting too.

As usability becomes more mainstream and popular among the top websites, companies need to place more focus on aesthetic appeal to differentiate themselves from other companies and other websites. Usability studies need to take a broader look at the user experience and ask questions about aesthetic appeal, perceived usability and actual usability. People don't make much of a distinction between usability and aesthetics. Basically, they have a more holistic view of their experience. Because of this, usability experts need to focus some of their attention on the role aesthetics ultimately plays in the entire user experience.

References

- Brady L. and Phillips, C. (2003) *Aesthetics and Usability: A Look at Color and Balance*, Usability News, 5/1/2003.
- Cloninger, C. (2000) *Usability Experts are From Mars, Graphic Designers are From Venus*, A List Apart Article No. 74, 7/28/2000.
- Grotzinger, E. (2005) *Usability Verses Aesthetics: A Comparative Analysis of User's Response to Web Design Utilizing Selected Development Concepts*, Major research project conducted by students at SAE College, Byron Bay and Middlesex University in London.
- Kurosu, M. and Kashimura K. (1995) *Apparent usability vs. inherent usability: experimental analysis on the determinants of the apparent usability*. CHI 95 Conference Companion 1995: 292-293.
- Lavie, T. and Tractinsky, N. (2004) *Assessing Dimensions of Perceived Visual Aesthetics of Web Sites*, International Journal of Human-Computer Studies, 60(3):269-298.
- Nielsen, J. (2000) *Designing Web Usability: The Practice of Simplicity*, Indianapolis: New Riders Publishing.
- Norman, D. A. (2002) *Emotion and design: Attractive things work better*, Interactions Magazine, ix (4), 36-42.
- Postrel, V. (2003) *The Substance of Style: How the Rise of Aesthetic Value Is Remaking Commerce, Culture, and Consciousness*, New York: HarperCollins Publishing.
- Tractinsky, N. (1997) *Aesthetics and Apparent Usability: Empirically Assessing Cultural and Methodological Issues*, CHI 97 Conference Proceedings, Atlanta, March 22-27, 1997) ACM, New York, pp. 115-122.
- Tractinsky, N. (2004) *Toward the Study of Aesthetics in Information Technology*, 25th Annual International Conference on Information Systems, Washington DC, December 12-15, pp. 771-780.
- Tractinsky, N., Shoval-Katz A. and Ikar D. (2000) *What is Beautiful is Usable*, Interacting with Computers, 13(2):127-145.