

Design follows invention, but precedes innovation.

Andrew McClare,
inventor of Kodak disc camera

GOOD DESIGN IN THE DIGITAL AGE

EDITOR'S NOTE:

Two big issues always hover around the concept of "design." The first is, What is design? The second is, What is *good* design? *Gain* asked Richard Buchanan of Carnegie Mellon University to reflect on both issues as they relate to design in and for electronic, interactive media. At the same time, we polled several leaders in the design field and hit the annals of design history in search of personal, working definitions of good design. Buchanan's article touched so many of these bases that we decided to intersperse his article with the ideas of many others.

"Good design" is an important issue in current discussions of websites and digital products in general. The explosive development of the digital medium has flooded the market with a wide array of information products of varying quality. Many of these products are highly effective, but a significant number fail to **meet the expectations of consumers or satisfy the needs of business**. As competition increases, we wonder if there are criteria to guide the development of new products for the digital environment. Is there a practical framework we can use as a touchstone in judging the quality of new products?

While the issue of good design is a pressing question today, **we should remember that "good design" is also a phrase from the past** that carries a mixed message. From 1949 to 1955 the Museum of Modern Art, along with the Merchandise Mart of Chicago, produced a series of exhibitions and educational programs to promote design excellence in the United States. It was called the "Good Design" program, and its director, Edgar Kaufmann, Jr., was aided by some of the leading designers of the day. In many ways the program was a great success, focusing public and corporate attention on the quality of products, affecting consumer perception and encouraging manufacturers to improve the quality of their products through wider use of professional designers. But the program was also controversial because it promoted a certain number of specific products selected by Kaufmann and his juries. To be sure, the criteria of "good design" were not mistaken. All of the products were examples of good

Good design is good business.

Tom Watson, Jr.,
president, IBM (1952–1971)

For a definition of good design, I go back to Vitruvius, who suggested that good design was "solidity, commodity and delight"

Hugh Dubberly,
co-founder, Dubberly Design Office

by **Richard Buchanan**

Good design is a form of respect—on the part of the producer for the person who will eventually spend hard-earned cash on the product, use the product, own the product.

David R. Brown,
editor of *Gain* and former president of Art Center College of Design

Good design today requires more vision (a larger point of view versus the single brilliant idea), more consistency (a deeper underlying structure of language and form versus the simple, uniform application of visual elements) and more patience (persistence over time versus creative authoritarianism).

William Drenttel,
partner, Jessica Helfand/William Drenttel design firm

design, **displaying qualities of beauty as well as functional clarity and efficiency.** But the selections also represented the tastes and preferences of a relatively small, elite social group, and many other examples of good design were neglected. Over time, the standards of the Good Design program became a heavy-handed authority in the minds of many people, standing as an obstacle to personal enjoyment of the diverse goods that surround us in our daily lives. The program ended up promoting standards that were too narrow for a country undergoing explosive technological, social and cultural change.

Good design for the digital medium shares some features of the “good design” movement of the past, but it also presents some strikingly different features that deserve close attention. Perhaps the **greatest change in good design, today, comes from a change in the designer’s stance.** By this, I mean the designer’s perspective on the problem of designing effective products for the marketplace. The historical “good design” movement—and much of design thinking throughout the 20th century—gave us an external perspective on products. The focus was on form, function, materials and the manner of industrial production. While the close connection of form and function pointed to the value of product performance, the product itself was judged in isolation from the immediate situation of use. In fact, the exhibition of good products at MoMA emphasized their isolated independence; they were typically displayed on pedestals against neutral backgrounds, signaling a cultural statement with symbolic meaning. There was **little sense of the context in which products would be used by people in daily life.**

This is where good design today departs significantly from the past. Designers place a premium on performance, but the designer’s stance is more intimately involved with human experience. Designers today explore products from the inside, focusing attention on performance as it is understood by the people who use products. For this reason, many designers explore “user experience” and employ insights from the social and behavioral sciences. They explore not only form and function, but also form and content, since content is what human beings seek in digital experiences. In short, designers explore what is useful, usable and desirable in products.

Many people believe that the only task of design is to provide styling to the visual appearance of products. This is a mistaken conception, comparable to the idea of the man in the street that the primary job of a CEO is to put a public face on the workings of his or her corporation. While visual expression is an important part of the work of the designer, the fundamental work lies in discovering the central argument of a product: the dramatic plot that shapes human interaction. What I mean by “argument” or “plot” is the ability of a product to fully engage a human being in support of a particular activity—whether the activity is a search for information, the conduct of a transaction or the casual enjoyment of exploring how other people express themselves in the new medium. Design is not a trivial aspect of the development of information technologies; it is the central discipline for humanizing all technologies, turning them to human purpose and enjoyment. In creating interactive digital environments, the designer’s stance is grounded in effective communication. This means more

Design should do the same thing in everyday life that art does when encountered: amaze us, scare us or delight us, but certainly open us to new worlds within our daily existence.

Aaron Betsky,
curator of architecture, design and digital projects,
San Francisco Museum of Modern Art

In most people’s vocabularies, design means veneer. It’s interior decorating. It’s the fabric of the curtains and sofa. But to me, nothing could be further from the meaning of design. Design is the fundamental soul of a man-made creation that ends up expressing itself in successive outer layers of the product or service.

Steve Jobs,
CEO, Apple Computer, as cited in *Fortune* magazine, January 24, 2000

When most successful, design creates an experience that is both delightful and relevant to the human being.

Darrel Rhea,
partner, Cheskin Research

Good design is design that surprises, something that is unexpected but immediately comprehensible and pleasing.

Norman Klein,
cultural critic and professor, California Institute of the Arts

than simply conveying information or doing so in a manner that is persuasive in the narrow sense of seducing and manipulating. It means engaging the intended community of end-users in a **lively process of perception, judgment and action**. Here is where the criteria of good design enter—and here is where I will give a personal interpretation of what I see emerging around us in digital products.

When I first encounter a website or other digital product, I ask, What is its intended use? What is it useful for in my life? In short, I look for content and purpose, and I make a fateful commitment to trust those who have conceived and designed the product. What I trust is that designers have tamed the complexity of **the content, shaping it with intellectual efficiency and clarity**. This is what it means to create a useful product, one that does its job well. In fact, the first task of the designer is to understand the content of the product, and to this end designers often collaborate with those who are expert in the content. What the designer adds, however, is a significant measure of common sense—sometimes lacking in content experts who know their subject matter but do not know how to present its logic to an ordinary human being.

I can seldom judge the full logic of a digital product on first encounter, and that is why trust is important in the beginning. Logic, structure and “rules of engagement” emerge only slowly, over time. But this is where the second question comes forward in my mind: Do I have easy access to the product? Is it usable from the first screen, the first cursor blink? Can I begin a personal exploration

without fear of making fatal mistakes? I do not ask for precise instructions, because I, like many others, like to play with the environment in my own personal way. But I do ask for important navigational clues—and they are particularly important when the product should serve an intensely practical purpose, such as financial transaction. In fact, this is the second task of the designer: to understand my needs and limitations, and to **provide the “affordances” that enable me to move forward with a feeling of accomplishment and satisfaction**. Admittedly, this is a very difficult matter, requiring not only common sense but a specialist’s knowledge of the mind and body. For this reason, designers work closely with “usability” specialists, who are often cognitive psychologists and social scientists—experts who have studied things like the limits of short-term memory in human beings, the most comfortable patterns of information display or the willingness of an ordinary person to cope with ambiguity and uncertainty. Here, too, the designer adds something important that technical experts may neglect—**the ability to bring grace and elegance into forms and devices that are humanly engaging**, often exciting and sometimes unexpected.

Designers add marvel, and that can make a product more deeply usable, reaching beyond the prosaic or pedestrian.

Usability counts for a lot in any encounter with a new product. It is what allows me to explore the product and discover what it has to offer. But there is a third question that enters my mind soon after the first and second questions: Do I really want to explore this product? This is

Good design is design that not only achieves a desired effect, but shapes our expectation of what the experience can be.

Astrida Valigorsky,
manager of New Media, Museum of Modern Art

Good interaction design is founded on a deep understanding of both broad human characteristics and the specific intentions of a particular constituency, so that it can marshal the appropriate information, processes and technology to all those constituents to achieve their goals, both professional and personal.

Alan Cooper,
founder and president, Cooper Interaction Design

Good design is the process of doing well what must be done anyway.

Louis Danziger,
graphic designer and educator

Scientists spend their time trying to discover what's already there. Designers spend their time inventing what doesn't yet exist.

Peter Lissaman,
aerospace engineer and professor, University of Southern California

a very personal question. It goes beyond the utility of the product and beyond issues of usability. When I have choices in the marketplace, why should I select this product over that? Why do I feel more comfortable with a particular website or other digital convenience? This is the subtle domain of the desirable, and it is often neglected—particularly when the culture of a company focuses on engineering and computer programming or when there are few choices available among competitors. **But desirability plays an important and often decisive role in product selection.** Does the product speak to me in a “voice” that makes me comfortable and that, just by its tone and quality, builds a bridge of identification and trust with me?

At first glance, this is an issue for marketing experts, since they study the deep appeal of products across different segments of the marketplace. For this reason, designers often work closely with marketing experts to develop strong and consistent branding strategies. Whereas marketing tends to stop at the segment level of analysis—addressing the general qualities that appeal to a general group of consumers—designers transform such assessments into concrete product features. By the nature of their own expertise, designers often explore unexpected or not easily predicted features that add distinction to the

voice of a product. Sometimes these are aesthetic qualities, **but often the features added by the designer are best regarded simply as cultural expressions** suited to the pluralism of contemporary life.

Qualities of usefulness, usability and desirability play a central role in good design for websites and all digital products. But there is one final step to turn them into useful tools of product development: discovering the proper balance of all three qualities for a particular product and the people who use the product. This is a strategic design decision, because it is fundamental in developing any product. If these are the criteria for good design in the digital environment, it is evident that they do not set a simple standard for quantitatively measuring the value of every product. In fact, the criteria help to explain the incredible diversity of good products today and the diversity of designers, since the range of utility, usability and desirability is so great. More important, the criteria suggested here should help guide strategic design planning as managers seek special niche opportunities and product differentiation in the marketplace. The real challenge in seeking good design is to distinguish in every individual case how the elements of the useful, usable and desirable are poorly or successfully explored for effective communication. 📦

Although it's not easy, a better way to beat an opponent is to make him passé by pleasing customers in new ways.

James Champy,
chairman, CSX Index

Design is the term we use to describe both the process and the result of giving tangible form to human ideas. Design doesn't just contribute to the quality of life; design, in many ways, now constitutes the quality of life.

Peter Lawrence,
founder, Corporate Design Foundation

Author biography

Richard Buchanan is head of the School of Design at Carnegie Mellon University. His work addresses issues of verbal and visual communication, communication planning and design, and interaction design. He is co-editor of *Discovering Design: Explorations in Design Studies* and *The Idea of Design*, and editor of the international journal *Design Issues: History, Theory, Criticism*.



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