

## 9. Design

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Definitions of *design* are many—the *Oxford English Dictionary*, for example, provides 13 for the verb *to design* and another seven for the noun (Oxford University Press, n.d.). But for our purposes, let's start with these for the verb:

- “To point out or represent by some distinctive sign, mark or token” (1a)
- “To intend (a thing) to be or do something; to mean to serve some purpose or fulfill some plan” (9)
- “To plan and execute (a structure, work of art, etc.); to fashion with artistic skill; to furnish or adorn with a design” (14)

Together, these definitions create a terrain for us to understand what design is for the technical communicator: It is the skilled (even artistic) use of signs or marks to convey a message, one that may work on multiple levels. This composite definition offers the technical communicator a particular kind of open-ended methodology. Design in technical communication requires us to articulate our intentions and purposes; to develop and then demonstrate our plan to stakeholders through the use of prototypes; and to apply their feedback to subsequent sketches, delineations, and iterations.

Understanding this complex term requires looking briefly at its history. Before the 18th century, making new things was generally the result of craft (“craft,” in Anglo-Saxon; Langlands, 2018). To learn a craft, you would apprentice with a master craftsman, learning how to make useful things by rote, and eventually graduating to more complex products of your own design.

But as design historian Adrian Forty (1986) pointed out, designing things began to separate from making things in the 18th century. A key figure in this separation was Josiah Wedgwood (1730–1795), a wildly successful English pottery manufacturer whose products were mostly neoclassical-themed pots with *bas-relief* images of Greek or Roman figures. In the 1770s, Wedgwood printed a detailed catalog, accompanied by samples of shapes and glazings available—an early exemplar of technical specifications. This led to a conflict between his craftsmen, who typically included variation to show their skill in the *craft* of pottery-making, and Wedgwood’s purchasers, who wanted exact replicas of what they had ordered. Separating design from craft, Wedgwood hired London artists to create new designs and limited the craftsmen to mechanical application (literally, of *appliques*). Thus, the catalog—an illustrated technical document, complete with engravings of plate outlines, product numbers, and

evocative names—coordinated the expectations of buyers with the products of manufacturers.

This separation of design from production has allowed technical communication to flourish as a way to share *information* consistently for specific purposes, situations, and *audiences*. A small number of designers could then provide designs to a manufactory level of production.

Yet this focus encourages novices in technical writing, in particular, to think of design as a series of questions tied to decoration that they approach with trepidation. Should this typeface be serif or sans serif? Should the menu's background color "match" other elements on the page, or contrast with them? How big should the leading be between lines of type? Certainly, these elements play a useful role in creating a design. But they approach design at a single level. These designers, like Wedgewood's factory hands, have gradually lost confidence in making such decisions. Even if we bring these symbolic/*visual* issues to digital media, we are still dealing with the same issues—just through Cascading Style Sheets (CSS) and the quick succession of rather straightforward and even automated animations, such as the hover/on/off state of a typical link on a website, which is mostly managed by the browser, rather than by anything special done by the designer.

But does this mean technical document designers are limited to two-dimensional design and simple issues of *style* and format attendant on typographic issues of height and width? Not at all. In fact, as J.J. Gibson's well-known concept of ecological perception suggests, we do not experience any object as a silent, planar tableau. Instead, we see a document as a three-dimensional object that we explore naturally, as we do any other object we encounter. It involves a physicality that encourages us to seek new angles of view. We pick it up and feel its weight in our hands; we look at the front and the back, of course, but also the spine and the foreedge. In this regard, technical documents are just like any other designed object that users interact with in multiple dimensions. And technical communicators are particularly good at integrating language and *rhetoric* with product design, if our employers let us do so.

Moreover, Richard Buchanan (1992) has argued that design extends to four levels of productive output, of which visual and symbolic communication is only the first:

1. The design of symbolic and visual communication (as described above)
2. The design of material objects
3. The design of activities and organized services
4. The design of complex systems or environments for living

Technical communicators have contributions to make in all four levels, in that they all rely on the use of symbolic and visual communication (Buchanan's level 1).

With the second level, the design of material objects, a well-designed chair is designed to look like something you can sit on. These communicative qualities of a material object are what Don Norman (2013) has called "affordances," or that

quality of a thing that tells you how it is to be used or appreciated. This concept applies readily to technical communication, but extends beyond the two-dimensional space. As Buchanan argues, this is essentially an approach that involves using the elements of design rhetorically, in other words, to convince us of the object's affordances. And if we want to discourage sitting in a particular chair or using a chair inappropriately, such as standing on the chair seat, a warning label can readily be designed as part of the object. It's not by chance that technical communicators have developed a special expertise in risk management through the design of cautions, warnings, and dangerous situations.

At Buchanan's third level, design of activities and organized services, technical communicators might think about enterprise-level problems, rather than just documents or material objects. Consider, for example, a help-desk website. While the typeface might be important, the information the website makes available is likely more important. In other words, the activities and services of the help desk are a primary decision, while the appearance of the site itself (while not unimportant) is secondary.

Finally, at the fourth level, design extends to the largest of built structures, such as homes, office buildings, parks, and schools. A good example is the design of zoos, which tend to be organized either by the animals' place in the Linnean system (the great apes; the two-toed ungulates) or by ecosystem (the veldt; the polar regions; the altiplano). No matter what system the designers choose, it is bound to carry consequences, whether you are a lion or an antelope. The entire zoo rests on a visual/rhetorical design that conveys not only what things are, but what we must do about them.

And therein lies a problem—one that must be addressed before we start looking for solutions. Don Norman (2013) has long observed that most of us go off chasing solutions before we even begin to understand the problem at hand. The process he and others proposed was to do design *research* first, especially focusing upon iterative, participatory design: participatory, which asks members of the *public* to participate in the design team, and iterative, which involves developing a series of prototypes to address sequential issues. This approach brings focus to identifying what the problem is, so that design develops from superficiality to the foundations of human experience.

Our composite definition of design—the skilled (even artistic) use of signs or marks to convey a message, one that may work on multiple levels—combined with Buchanan's levels of design offers some implicit features that are important for technical communication:

- Design assumes intention on the part of the designer. The intention may be borrowed or operating by proxy, but nonetheless, design assumes adherence to a larger plan.
- Design includes typography and other meaningful signifiers, a visual medium depending upon distinctive signs, marks, and tokens. Consider,

for example, the ubiquitous media player controls ◀◀ || ▶▶ ■ ▶▶ whose meanings are profoundly dependent upon *technology*.

- Design assumes a distant relationship between design and production, and therefore between designers and consumers/users.

In other words, design is a process or an approach that helps people to solve problems intentionally. It is not necessarily about art, shapes, colors, or any other symbolic forms of communication, though it often makes use of them. It takes the form of creating or changing something sensible in your range of perception. This latter distinction is important enough that it has acquired a more detailed and specific moniker: “design thinking.”

Design thinking, as defined by Don Norman (2018), requires thinking systematically: “stepping back from the immediate issue and taking a broader look . . . [and] realizing that any problem is part of a larger whole, and that the solution is likely to require understanding the entire system.” Shelley Goldman and Zaza Kabayadondo (2017) concur, defining design thinking in terms of its DIY (do-it-yourself) roots:

Design thinking is a method of problem-solving that relies on a complex set of skills, processes, and mindsets that help people generate novel solutions to problems. . . . Once design thinking has been mastered anyone can go about redesigning the systems, infrastructures, and organizations that shape our lives (p. 3).

Design thinking then leads to other design approaches. User-centered design focuses on how people, usually customers, will use the objects and documents we design. Participatory design likewise makes community members actual participants in the design research and development, and human-centered design considers issues of *accessibility* and general human welfare. Such is design *thinking*, in a nutshell: a process of finding communicative approaches to design problems, based on the people who are going to be using that document.

But how does this all fit with technical communication? To answer that, we must look at the way that technical communication developed as a field and enterprise. Technical communication began as a *profession* between World War I and II, somewhere around 1920. Every military product had both a part number and an instruction manual tied to a system of *documentation*. By the beginning of the Cold War, practitioners could craft documentation quickly for the use of hundreds of thousands of soldiers, bureaucrats and service-people. Sadly, this proliferation of documentation led to abuse. In 1963, Malden Grange Bishop in *Billions for Confusion* claimed that, in the boom years of the Cold War, con men made fraudulent fortunes by cutting pages out of old military equipment manuals and pasting them into new manuals. This kind of rough surgery succeeded because neither the contracting officers nor the other writers knew enough about typography to tell the difference between the pasted-in pages. Clearly, the government and manufacturers

spent time and money creating documentation nobody read. Communication from this period tended toward what might better be called *design thoughtlessness*.

Prior to the invention of the graphic user interfaces, including the use of color, image, and animation on screens of various resolutions and sizes, a technical writer dealt with words almost exclusively, or at most with their arrangement into sections or subsections in what became known as an “information architecture.” The *strategic* aspect of documentation was left to management or engineers, including the visual and tactile aspects of a document, such as the size and weight of the paper, the binding, and data tables; a graphic designer managed the scientific illustrations, charts, and graphs. If the production values were low enough or if the institution’s standard style sheet was specific enough, a document might skip the art department and go directly to a printer or publisher. The technical writer had no need for skills or technologies beyond those for basic writing and an ability to adhere to institutional style sheets.

With the advent of computers, technical communicators had role of designer thrust upon them: Within a decade, technical writers had to transition from typewriters to websites. Today’s technical *communication* includes not just words and *editing*, but other modes of communication variably called *design*, *information design*, *communication design*, *interface design*, and, most broadly, *user experience design*—titles that cover the various levels of design described above. This makes technical communication, by whatever title, a field that requires constant retraining.

A variety of design theorists and historians of design have charted the *history* of design as it relates to production and consumption of texts. The most significant design scholars tend to be polymaths, as interested in the liberal arts (such as history) as they are in the social sciences. They are as familiar with good design culture as they are with design practices and research methodologies. For example, Saul Carliner (2003) proposed that designers must consider the affective, the physical, and the cognitive aspects of information design; John Gage (1999), an art historian, offered an exhaustive discussion of the social and cultural value of color; Karen Schriver (1997), one of the best-known document designers, conducted robust original research in establishing those features most valued by practitioners; and Elizabeth Tebeaux, a historian of technical communication, has pointed out that even early technical documents had features that we associate with technical documents today, including the use of white space, lists, tables, and graphic illustrations.

While this is only a handful of scholars on design, the subject continues to grow in interest and impact. We would do well to build our design skills and see design as an integral part of technical communication.

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