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# What Is Interaction Design?

Every moment of every day, millions of people send e-mail, talk on mobile phones, instant message each other, record TV shows with TiVo, and listen to music on their iPods. All of these things are made possible by good engineering. But it's interaction design that makes them usable, useful, and fun.

You benefit from good interaction design every time you:

- ▶ Go to an automatic teller machine (ATM) and withdraw cash in a few simple touches on a screen.
- ▶ Become engrossed in a computer game.
- ▶ Share photos on the Web.
- ▶ Text message a friend from your mobile phone.
- ▶ Are treated quickly and well in an emergency room.
- ▶ Post to your blog (**Figure 1.1**).

**Figure 1.1**

Blogging tool LiveJournal enables one-to-many interactions.



But the reverse is often also true. We suffer from poor interaction design all around us. Thousands of interaction design problems wait to be solved—such as when you:

- ▶ Try to use self-checkout at a grocery store and it takes you half an hour.
- ▶ Can't get your car to tell you what's wrong with it when it breaks down.
- ▶ Wait at a bus stop with no idea when the next bus will arrive.
- ▶ Struggle to synchronize your mobile phone to your computer.
- ▶ Stand in line for hours at the Department of Motor Vehicles.

Any time you communicate with people through a device like a mobile phone or computer or through a service like the DMV, interaction designers could be involved. Indeed, for the best experience, they *should* be involved.

Back in 1990, Bill Moggridge, a principal of the design firm IDEO, realized that for some time he and some of his colleagues had been creating a very different kind of design. It wasn't product design exactly, but they were definitely designing products. Nor was it communication design, although they used some of that discipline's tools as well. It wasn't computer science either, although a lot of it had to do with computers and software. No, this was something different. It drew on all those disciplines, but was something else, and it had to do with connecting people through the products they used. Moggridge called this new practice *interaction design*.

In the years since then, interaction design has grown from a tiny, specialized discipline to one practiced by tens of thousands of people all over the world, many of whom don't call themselves interaction designers and may not even be aware of the discipline. Universities now offer degrees in it, and you'll find practitioners of interaction design at every major software and design firm, as well as in banks such as Wells Fargo, hospitals such as the Mayo Clinic, and appliance manufacturers such as Whirlpool.

The rise of the commercial Internet in the mid 1990s and the widespread incorporation of microprocessors into machines such as cars, dishwashers, and phones where previously they hadn't been used led to this explosive growth in the number of interaction designers because suddenly a multitude

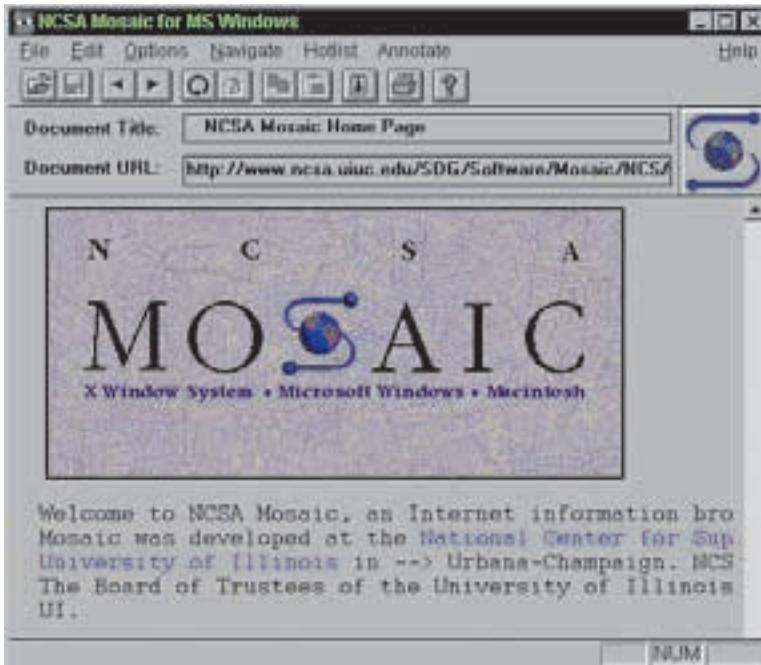
of serious interaction problems needed to be solved. Our gadgets became digital, as did our workplaces, homes, transportation, and communication devices. Our everyday stuff temporarily became unfamiliar to us; the confusion we once collectively had about how to set the clock on the VCR spread to our entire lives. We had to relearn how to dial a phone number and work the stereo and use our computers. It was the initial practitioners of interaction design—mostly coming from other disciplines—who helped us begin to make sense of our newly digitized world, and these same people now, aided by new interaction designers, continue to refine and practice the craft as our devices, and our world, grow ever more complex.

## What Are Interactions and Interaction Design?

Although we experience examples of good and bad interaction design every day, interaction design as a discipline is tricky to define. In part, this is the result of its interdisciplinary roots: in industrial design, human factors, and human-computer interaction. It's also because a lot of interaction design is invisible, functioning behind the scenes. Why do Windows and Mac OS X, which basically do the same thing and can, with some tinkering, even look identical, *feel* so different? It's because interaction design is about behavior, and behavior is much harder to observe and understand than appearance. It's much easier to notice and discuss a garish color than a subtle transaction that may, over time, drive you crazy.

Interaction design is the art of facilitating interactions between humans through products and services. It is also, to a lesser extent, about the interactions between humans and those products that have some sort of “awareness”—that is, products with a microprocessor that are able to sense and respond to humans. Let's break this definition down.

Interaction design is an art—an applied art, like furniture making; it's not a science. Although best practices have emerged over the past three decades, the discipline has yet to arrive at hard and fast rules that can be proven via scientific methods and that are true in all instances. Interaction design is by its nature contextual: it solves specific problems under a particular set of circumstances. For example, even though a 1994 Mosaic browser (**Figure 1.2**) is an excellent piece of interaction design, you wouldn't install it on your computer now. It served its purpose *for its time and context*.

**Figure 1.2**

The Mosaic browser was a fantastic piece of interaction design...for 1994. You wouldn't use it now.

Like other arts such as painting, interaction design involves many methods and methodologies in its tasks, and ways of working go in and out of vogue and often compete for dominance. Currently, a very user-centered design methodology in which products are researched and tested with users (see Chapter 4) is in style, but this hasn't always been the case, and recently these methods have been challenged (see Chapter 2)—Microsoft performs extensive user testing and research; Apple, known for its innovative interaction design, does none.

Interaction design is an applied art; its usefulness comes in its application to real problems, such as figuring out the best way to send e-mail. Its purpose is to foster communication—an interaction—between two or more human beings or, to a lesser degree, between a human and an artificial entity capable of responding in some manner, such as a computer, mobile phone, or digital appliance. These communications can take many forms; they can be one-on-one as with a telephone call, one-to-many as with a blog, or many-to-many as with the stock market.

When people communicate through or with something—a phone, a blog, the stock market—they need those products and services designed to provide an optimal experience that facilitates interaction. Those products are the rich soil in which interaction design grows, and thanks to the Internet, wireless devices, mobile phones, and a host of other technologies, the soil is richer than ever.

Note that these products do not necessarily involve a computer screen. They can be digital (software) or analog (robots), physical (PDAs) or incorporeal (workflows), or some combination thereof. There are interaction designers (called imagineers) working at Disney theme parks, for instance, who work in all these realms when creating a single attraction. Interaction design talents are also employed to create systems such as the Netflix movie rental service or City CarShare, a service for sharing cars, which involve nondigital components, as we'll discuss in Chapter 8.

Since technology frequently changes, good interaction design doesn't align itself to any one technology or medium in particular. Interaction design should be technologically agnostic, concerned only with the right technologies for the task at hand, be it a complex software application or a simple sign.

Interaction design is concerned with the behavior of products and services, with how products and services *work*. Interaction designers should spend a great deal of time defining these behaviors (see Chapter 5), but they should never forget that the goal is to facilitate interactions between humans. Certainly, many interaction designers work with products that have “awareness”—the ability to sense and respond to human input—such as computers, mobile phones, and many so-called smart environments. But interaction design isn't about interaction with computers (that's the discipline of human-computer interaction) or interaction with machines (that's industrial design). It's about making connections between people *through* these products, not connecting to the product itself.

## Why Interaction *Design*?

The term *design* can be difficult to get a handle on. Consider this infamous sentence by design history scholar John Heskett: “Design is to design a design to produce a design.”