

Designing Interactions

Bill Moggridge. Cambridge, MA: The MIT Press, 2007. 766 + xxiv pages + DVD with 100 minutes of video content. US\$39.95.

The primary audience for *Designing Interactions* is those interested in tracing “how the design of the way people interact with computer technology developed: from the earliest days of Star, the first screen-based graphical user interface and the precursor of the Apple and Windows interfaces, to the plethora of mobile multimedia devices and system we use now” (p. xi). Bill Moggridge explains interaction design as a combination of “software and user-interface design” (p. 14).

The foreword, written by Gillian Crampton Smith, an “academic in the emerging discipline of interaction design,” (p. ix) sums up interaction design by saying that “It’s about shaping our everyday life through digital artifacts – for work, for play, and for entertainment” (p. xi). “Good design comes from the successful synthesis of a solution that recognized all the relevant constraints, and the nature of the constraints defines the difference between design disciplines” (p. 649).

The book and the DVD are built around interviews with “forty people who are making a difference in the design of interactions” (p. xxii). Most of the video segments on the DVD are in the talking head style – the expert talks directly to the camera. Each segment is about three minutes in duration. Highlights from companies including GRiD, Apple, Microsoft, Palm, and Google are included. Moggridge’s long and successful history in Silicon Valley facilitates the insider’s perspective that is presented in these stories that span a half a century.

For innovators, the book’s value is in the insights presented. For example, the story of the first laptop computer comes from John Ellenby and GRiD from the early 1980s: “John saw the components used in a computer steadily shrinking and had the vision to realize that there was a potential market for people

who needed to move around for their work and would like to carry the information with them in their computers. He set out to create a computer that would fit in a briefcase and be usable away from the office” (pp. 11-12).

Other insights are built on eyewitness accounts such as “The Demo that Changed the World” (p. 30) from 9 December 1968. That day, Doug Engelbart and a team from Stanford Research Institute debuted the computer mouse, the graphic user interface, display editing with integrated text and graphics, and hyper-documents.

Sometimes the insights are presented as concise descriptions. For example, Bill Verpalnk’s interaction design process (pp. 130-131) is presented as a four-step process.

1. Motivation: problems and brilliant concepts
2. Meaning: What metaphors are applicable? What is the context?
3. Modes: Create a conceptual model that ties the model together
4. Mapping: Design and arrange the display and controls

John Maeda’s eight laws of simplicity reflect his ambition to create a new Arts and Crafts movement for the digital age “founded on the desire to educate at a basic level” (p. 623). Maeda’s seventh law is “The more care, attention, and effort applied to that which is less, the more it shall be perceived as more than it really is” (p. 625).

Occasionally, the insights reveal how a diverse career path prepared someone for breakthrough innovations. Consider the case of Jeff Hawkins: “Jeff spent four years working hard with the marketing team at GRiD, struggling to sell the first laptop computer to customers who were not quite ready to pay so much for something that they thought their secretaries should use. The experience served to educate him about the nature of mobile computing” (p. 184).

Over the next few years, there were notable failures in the handheld computer market including that of the Apple Newton. Drawing from his experience and observations from the Newton’s failure, Hawkins defined four design criteria for the PalmPilot (p. 204). They were:

- Size – must fit in a shirt or jacket pocket

- Price – \$299, an aggressive low price point
- Synchronization – a core application
- Speed – comparable to paper-based organizers. Paper-based systems were the competition and not another digital system.

“Those four design criteria solved a lot of the problems that were prevalent on personal computers and PDAs at the time, and turned out to be a defining formula for success” (p. 205). Rob Haitani articulated his design approach to the Palm Operating System as “If you can really understand the one thing your customer wants to do most frequently, and make that a one-step process, then I guarantee people will like the product (p. 216). His pragmatic design process is “First understand the customer, then prioritize ruthlessly” (p. 216).

After the success of the Palm product line in the late 1990s, Hawkins recalls “At the time we started Handspring, it was very clear to me that eventually all handheld computers would have wireless communications in them. It was not clear to me at all that cell phones would be dominant; I didn’t even know about cell phones at the time – it wasn’t even in my vocabulary – but I knew that some form of wireless was going to be important.” (p. 227).

Excerpts such as those from Hawkins exemplify that “Design thinking harnesses tacit knowledge rather than the explicit knowledge of logically expressed thoughts. . . . Designers have the ability and the training to harness the tacit knowledge of the unconscious mind, rather than being limited to working with explicit knowledge. This makes them good at synthesizing complex problems with large numbers of constraints; it also makes them bad at explaining or defining what they are doing or thinking” (p. 650).

David Kelley, founder of IDEO, provides an expanded definition of interaction design. He states, “Interaction design started from two separation directions, with screen graphics for displays and separate input devices, but it got more interesting when the hardware and software came together in products” (p. 293). Now designers are taught to be integrators. Design schools provide “an interdisciplinary program for the development of products, experiences, services, and spaces, with design as the core skill” (p. 302).

Some of the insights in *Designing Interactions* are provocative. For example, Paul Mercer defines himself as a developer of toolkits. His former company, Pixa, played an important role in the development of Apple's iPod. Mercer states, "Just because you have the building blocks, doesn't mean you'll build great products. You witness what Microsoft has done. They have the fastest computers in the world running their platform; they've got a scientific staff, a research staff that's really unparalleled today. Many of the great computer science and user experience researchers of the last twenty years are now working for Microsoft. And yet, what is missing there that does not allow them to be the first to build iPod and iTunes and the next generation of products?" (p. 314).

Tim Mott was one of the early employees at Electronic Arts and former manager at Xerox PARC. He states, "One of the things that we figured out really quickly was that the intrinsic of the product really make a difference. It doesn't matter how much money you spend promoting a movie, if it's not a good movie, it'll fail at its second weekend after release" (p. 326).

Moggridge relays an insight on the distinction of products and services. Services are things that people use. Products are things that people own (p. 415). Chapter 7 presents Internet insights such as "Google established its position by providing quality, because when they started out, they were not the only search engine" (p. 467).

User input and user testing are recurring components in the innovation process. The section on QuickTime includes a confession about "the tendency of designers just as much as engineers to design for themselves, for their own skills and familiarities, rather than for the audience for whom the product is intended" (p. 559).

The "51 Ways of Learning about People" section (pp. 667-677) presents work from Jane Fulton Suri. "The idea of the methods cards is to make a large number of different techniques accessible to all members of a design team and to encourage a creative approach to the search for information and insights as their projects evolve" (p. 669). This approach has similarities with contemporary TRIZ.

The People and Prototypes chapter concludes with a section on process in which Moggridge provides a description of the process that he has evolved for designing interactions with a community of practitioners (pp. 725-735).

Designing Interactions isn't a textbook on how to become a professional interaction designer. It is a book for puzzle solvers. The innovation insights are treasures to be discovered throughout the 766 pages of text and color images. It presents historical glimpses of breakthrough innovations where brilliant pioneers asked, "How can I do this?" and "In the context of technology maturity and market acceptance, is the timing right for my implementation?"

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