

## REVIEW

### **Activity-Centered Design - An Ecological Approach to Designing Smart Tools and Usable Symbols**

*With new insights to a well-documented topic, this book offers an excellent incentive and useful tools for system designers to pursue activity-centered design*

Reviewed by Carl Bedingfield

*Activity-Centered Design - An Ecological Approach to Designing Smart Tools and Usable Symbols*, Geri Gay and Helene Hembrooke, Publisher: MIT Press, Cambridge, Mass., 2004, 100 pages, plus references

Perhaps the term "ecological" in the title should have been a clue. On my first reading, I took this book too lightly. Lulled by years of reading technical documents, I skimmed through it, comforted by the occasional use of familiar technical terminology. I have had just enough contact with user-centered design to smile knowingly, nod, and move along. Certainly some of the content was familiar. One of the chapters describes the benefits and the liabilities of classroom connectivity. My collegiate son often takes his Powerbook to class, where he has wireless access to the Internet. Through him, I've seen some of the pros and cons reported in one of the studies in the book. And involving stakeholders in the design of a new feature -- that sounded familiar enough.

Fortunately, I had a free afternoon to re-read the book in the light of some recent, personal, "context-expanding" experiences, including attendance at a multi-disciplinary idea festival, and reading some of Oliver Sacks' neurological case histories. Primed with these new human sensitivities, I soaked up each paragraph, lingering longer over each unfamiliar term, and taking time to re-read the occasional complex sentence. The result was a collection of new ideas and insights, which have added a welcome dimension to my understanding of the design process.

Geri Gay is Professor in the Department of Communication and Information Science at Cornell University, and the Director of the Human-Computer Interaction Group there; Helene Hembrooke is Assistant Director. In addition to their credible resume of papers in the subject field, their book includes more than a hundred additional references to other works in the field.

The various studies in the book are primarily based on examinations of interactions in two relatively familiar environments, an art museum, and a college campus. They use these studies to demonstrate the tangible benefits of activity-centered design.

Within the museum context, they describe the process of designing an electronic museum guide, which is a digital enhancement of the audio tape player often used to guide patrons through museums. In a subsequent chapter, they recount the results of a project that created an online art museum, intended to inform and encourage shared experiences among "visitors."

Within the campus context, they describe a study of the impact of providing students with continuous, campus-wide, wireless access to network applications, including Internet browsing, e-mail, and instant messaging. They also report on the results of a location-based note system (including "eGraffiti"), which led to the further development of an electronic guided tour of the campus, facilitated by a wireless- and location-enabled Personal Digital Assistant.

Although the study results by themselves are interesting and informative, the book is ultimately not about the studies themselves, but about the tools and methods they are illustrating. While a few simple quotes necessarily fall short of capturing the complexity of the discussions, here are a few excerpts that caught my eye:

"... the most productive design exchanges occur when users, developers, and other groups interact, develop, and maintain a technological innovation."

"Designers need to consider a number of variables that affect the quality of the user's experience, including issues of trust, coordination, participants' networks, social cues, and other social conventions."

"... users will readily contribute contextual information to a database when the context is highly relevant."

The final chapter in the book proposes the application of configuration theory to the analysis of "places and spaces." Past studies of human-computer interaction have had the luxury of analyzing captive users at stationary machines doing fixed tasks. The current environment consists of multi-user, distributed systems, portable computing devices of all sorts of configurations, widely-available wireless access, and an ever-growing list of communication applications. Such a study environment adds multiple dimensions to the study of human-computer interactions, and produces torrents of data to be analyzed and understood. The authors believe that configuration analysis offers a method of taming this wealth of information.

The book is clearly intended as the beginning of an on-going dialogue. It ends a bit like a Star Wars movie, with the promise of a sequel. There is clearly opportunity for additional work in data representation, as well as deeper study into each of the areas described in these six chapters. However, the book provides an excellent incentive for system designers to pursue activity-centered design, and a good initial set of tools to start them on their way.

*Carl Bedingfield is a principal member of the technical staff of a large telecommunications company. His work includes the design and implementation of new services.*

*Source: Ubiquity, Volume 5, Issue 38, December 1 - 7, 2004, <http://www.acm.org/ubiquity/>*