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## Overview of the chapters

### *Information Design in Motion*—Beth Mazur

Whereas the other chapters look at the present or future states of information design, Mazur looks at its history, one which extends much farther back than the past 20 years. The chapter examines information design from both a historical and speculative perspective, describing a range of potential information design products, not just information-rich graphics (of which Minard's graphic of Napoleon's march to Moscow is perhaps the most famous example) and looks at some of the conversations that have been occupying today's information designers.

### *Physical, Cognitive, and Affective: A Three-Part Framework for Information Design*—Saul Carliner

This chapter, the only reprint of the volume, is an article printed in *Technical Communication* (Winter 2000) which should become one of the classic articles in information design.

Carliner first explores limitations with the prevailing concept of document design and then offers a definition of information design. But more than simply another definition, the article develops that definition into a framework meant to broaden the perspective of information. That framework describes the three types of design activities involved in technical communication: physical design, cognitive design, and affective. Finally, he considers the strengths and limitations of this framework.

### *Collaborative Processes and Politics in Complex Information Design*—David Sless

David Sless draws on his experience at the Communication Research Institute of Australia (CRIA) to provide a description of both the design methods and some short case studies. He focuses on what he has long called collaborative design methods or, the more recent term, user-focused design methods. After a discussion on the stages of the collaborative information design used at the CRIA, he discusses how following these stages helps to ensure that the real users are represented in the design. The case studies focus, not on the design process itself, but on examining the problems and political factors which have influenced various projects and how these factors can seriously impede the development of an effective design.

### *The Five Dimensions of Usability*—Whitney Quesenbery

In common parlance, usability is often equated with ease of use, a satisfyingly simple reduction to focus on the user's interaction with the

product. This focus concentrates on user actions toward a goal. In this context, it is understandable that the role of information design in enhancing usability has been obscured. Quesenbery identifies a five-dimensional framework for connecting the usability to the user experience, which taken together, can both describe an experience and serve as a guide for design. By understanding the users, their goals, and context of use, the relative importance of each dimension can be determined. Part of the chapter explores how these five dimensions come into play in this informational world, where the content must carry much of the burden of creating a usable experience.

*Applying Learning Theory to the Design of Web-Based Instruction—Susan Feinberg, Margaret Murphy, and John Duda*

Feinberg, Murphy, and Duda report on a study in the design of a web-based instructional module as part of an interdisciplinary team project. The team's objective was to apply cognitive load theory to the design of web-based instruction and user test the product. This chapter describes cognitive load theory as it applies to the design of effective instruction. It also presents guidelines for the effective uses of multimedia and graphical user interfaces, especially as they inhibit learning and impose unnecessary cognitive demand on the learner.

*What Makes Up a Procedure—Hans van der Meij, Peter Blijleven, and Leanne Jansen*

The key part of any manual is, of course, the presence of information that supports the user's actions. Over and over again, research indicates that users are predominantly—but not exclusively—interested in this type of information, as opposed to declarative or background information. Going beyond the numerous style sheets and extensive discussions on how to present procedures, the authors undertake a systematic study to analyze and describe procedures as they appear in (a broad sample of more than 100 manuals) technical documentation. They then connect the analysis with both the theory and practice of instruction writing.

*Visual Design Methods in Interactive Applications—Jean Vanderdonckt*

Vanderdonckt illustrates how visual design techniques can serve for laying out information items and interactive objects in user interfaces of interactive multimedia applications. These objects are generally known and designed for their great user feedback and interaction through simple interaction objects (e.g., list boxes, radio buttons, push buttons) and interactive objects (e.g., text, image, graphic animation, picture, video motion). Thirty pairs of visual techniques are introduced by defining their opposites on a continuum ranging from harmony to contrast.

***Contextual Inquiry as a Method of Information Design—Karl Smart***

The purpose of this chapter is twofold: (1) to demonstrate an information design method (contextual inquiry) as it applies to documentation design through a case study and (2) to report on the results of the contextual design case study, outlining insights learned about users and showing how contextual data can inform documentation design decisions. The chapter begins with a discussion of the contextual design methodology, outlining the development team's organization and how they determined their research focus. Smart shows how the team gathered and interpreted user data and describes the process of creating an affinity diagram and consolidated work models.

***Dynamic Usability: Designing Usefulness Into Systems for Complex Tasks—Barbara Mirel***

Systems that support users' complex tasks and problem-solving have unique demands in terms of presenting users with the right information in the right design at the right time. These systems for complex tasks and problems must be adaptable.

This chapter proposes a conceptual framework for conducting the usability and user experience inquiries that are needed for first defining and then building usefulness into systems for complex tasks from the start. It then identifies the applied effects of these dynamic usability inquiries, particularly stressing the ways in which findings need to shape decisions about system architecture and scope. Next the chapter analyzes how building usefulness into architecture and scope ultimately impacts the information design that users see in interactive interfaces and help systems. It concludes by addressing the political obstacles that commonly challenge usability and information designers in these efforts to attain dynamic usability.

***Complex Problem Solving and Context Analysis—Michael J. Albers***

This chapter connects complex problem-solving research with situation awareness research to define a method of developing web-based knowledge management designs which assist the user in solving complex problems. In effective design for complex problem solving, the focus must be on providing the appropriate content for the user's real-world goals and information needs. Thus, the process of supporting complex problems is to help the users (1) identify the important elements of the situation, (2) identify the relationships between the elements, and (3) identify the information required to ensure the decision is resulting in the desired response.

Content analysis, developed in this chapter, provides a framework for ensuring that the information within a system can answer the above

criteria. It also ensures that the designer has enough situational knowledge to present them in a manner that fits Marchionini's three dimensions of information: specific to the situation, in the proper quantity, and presented in a timely manner.

*Applying Survey Research Methods to Gather Customer Data and to Obtain User Feedback—Beverly Zimmerman and Maribeth C. Clarke*

Software documentation writers frequently have to gather information about their customers or obtain feedback about their documentation. Much of this information gathering and usability testing is based on a written or verbal question-and-answer process that results in answers that are used to measure the quality of the software's documentation. It is important, therefore, for documentation writers to understand how to create reliable and valid measures. This chapter reviews recent work in survey research and summarizes the principles documentation writers should know to gather usable data about software users and to create effective measures of their documentation.

*Single Sourcing and Information Design—Ann Rockley*

People often have to create documents for different audiences and for different media (e.g. web, print). However, because timelines and budgets for developing information are often tight, we need more efficient ways to develop information. Single sourcing is a method that can address all these needs. Single sourcing enables you to create information for multiple users with multiple needs and build customized documents "on-the-fly." Although single sourcing does take more up-front planning, it can significantly decrease costs and development times once implemented. This chapter describes single sourcing, its benefits and costs, and provides a clear process for developing effective single source materials.

*Redesigning to Make Better Use of Screen Real Estate—Geoff Hart*

Developers often ask writers to help them fit all the necessary text into a dialog box or other component of the user interface. One common request is to reduce the labels of the interface elements to no more than "two or three words." This chapter proposes an iterative strategy for analyzing the problem, and presents two case studies that demonstrate application of the principles. Careful reexamination of relationships between elements of the information and redundancy in how those elements are presented, combined with knowledge of the sequence users will follow to actually use the information, often reveals simple solutions for resolving the problem of limited space.