The DIGITAL Technical Documentation Handbook

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Contents

Preface

The Digital Technical Documentation Handbook describes the process of creating effective technical user information at Digital Equipment Corporation. In addition, it describes techniques for improving the usefulness of user information, covering such topics as creating effective indexes, maintaining consistent terminology, and developing usability studies.

This handbook is intended to be used with *The Digital Style Guide*, a complete guide to style for Digital™ technical user information.

Audience

This handbook has two major audiences:

- The technical publications community of Digital Equipment Corporation
- Third-party partners of Digital, other Digital customers, and those working with open systems

In addition, universities and colleges may use this material as a case study of the technical communication processes and techniques within a company.

Structure of This Handbook

The guide is divided into four parts and a glossary and index.

- Part I: Environment
  - Chapter 1 describes the goals of user information and the changing environment of technical communication.
- Part II: Process
  - Chapter 2 gives an overview of the stages in the information development process.
  - Chapter 3 describes how to gather information about the audience and product.
  - Chapter 4 discusses the concepts of designing modular information and presents a case study in designing an information set.

- Chapter 5 gives guidelines for writing an information plan.
- Chapter 6 discusses the draft and review process and describes the different types of reviews.
- Chapter 7 gives an overview of the general production and delivery process.
- Chapter 8 describes the activities involved in closing a project and archiving project materials.

- Part III: Techniques
  - Chapter 9 provides techniques for maintaining consistent terminology.
  - Chapter 10 discusses how to create effective indexes.
  - Chapter 11 describes the different ways that Digital provides information on line to its customers.
  - Chapter 12 describes different navigational cues that increase users' access to the information they need.
  - Chapter 13 describes different ways to test the usability of user information.
  - Chapter 14 describes how to research trademarks.
- Part IV: Appendixes
  - Appendix A contains a series of quality control checklists that you can use at different stages throughout the information creation process.
  - Appendix B is a selected bibliography of resources for professional technical communicators.

Related Information

The following resources also contain information about creating useful technical information:

- *The Digital Style Guide*
- *Developing International User Information*
- *Digital Guide to Developing International Software*
- *NAS Guide to Documenting Multiplatform Products*
- *The Digital Guide to Developing Software*

See Appendix B for information on obtaining these resources and on other helpful references.

Conventions

This guide uses the following conventions:

Convention	Description
you	The second person refers to the information team as a whole, including the functions of writing, editing, graphic design, and production. If a specific function or person is meant, such as the writing function, the guide names the function explicitly, for example, *The writer. . . .*
. . .	Horizontal ellipsis points indicate the omission of material from an example. The information is omitted because it is not important to the topic being discussed.
. . .	Vertical ellipsis points indicate the omission of information from an example. The information is omitted because it is not important to the topic being discussed.
italic type	Italic type sets off references to terms used as or singled out as terms and the complete titles of manuals. In the index and glossary, italic type indicates cross-references to further information.
boldface type	Boldface type identifies terms defined in text and in the glossary.
`monospace type`	Monospace type sets off examples.
nn nnn.nnn nn	A space character separates digits in numerals with 5 or more digits. For example, *10 000* equals *ten thousand.*
n.nn	A period in numerals signals the decimal point indicator. For example, *1.75* equals *one and three-fourths.*
OpenVMS™ systems	Refers to OpenVMS Alpha systems and OpenVMS VAX™ systems unless otherwise specified.

Acknowledgments

Many individuals within Digital helped to develop the material in this guide, devoting many hours to researching, writing, and reviewing. We cannot possibly list everyone who contributed to the project, but we thank all of them for their time and expertise. We would also like to thank Fern Reiss, the initial project leader who coordinated the work that began this guide. Thanks also go to our management for letting us devote the time needed to the project.

Part I

Environment

The chapter in this part describes the user information environment:

- Goal of user information
- Information team members
- Product team members
- Changing factors in the user information environment

1
User Information Environment

User information is any material, in printed or electronic form, that does one or more of the following:

- Trains users to use a product
- Describes the features of the product in a way that users can readily find the information they need
- Shows users how to make the most efficient use of product features to complete their tasks
- Provides conceptual material that helps the user understand how the product works with other products

User information is composed of **modules**, cohesive units of information. Modules may be combined into larger **components**, such as a book, CBI, or a collection of related help topics. The collection of all the modules and components for a product is called the **information set**. See Section 1.4.4 and Chapter 4 for more information on modules.

The **product** may be hardware, software, or an integrated system. It may also be a process, standard, or conceptual information. The task of the user information team is to make the product usable for the audience of the product, whatever it may be. See Section 1.2 for more information on the user information team.

This chapter discusses the elements that make up the user information environment at Digital Equipment Corporation:

- Goal of user information (Section 1.1)
- Functions of the user information team (Section 1.2)
- Product team (Section 1.3)
- Changing environment for user information (Section 1.4)

1.1 Goal of User Information

The goal of user information is to organize information in such a way that the users can efficiently learn the product and use the product to accomplish their tasks. To achieve this goal, the user information must meet the following criteria:

- Accuracy

  One of the key demands for technical information is that it be accurate. For users to accomplish tasks safely and easily, they must have the correct information at hand. Inaccurate information may expose the user to unnecessary frustration, delays, or even danger.

  To ensure accuracy, the user information team must work with the product team as full partners and must also ensure that there is adequate review of the information. Chapter 6 provides further information about ensuring technical accuracy.

- Appropriateness

  The information given to the users must be appropriate for their needs so that they are not overwhelmed by a sea of information. Chapter 4 and Chapter 13 provide further information on designing information to meet users' needs.

- Accessibility

  If users cannot find the information they need, then its accuracy and appropriateness are useless because the users cannot perform their tasks efficiently. Chapter 10 provides guidelines for creating effective indexes, a primary means of making information accessible to users. Chapter 12 describes navigational cues you can use to increase users' access to information.

- Clarity

  To be useful, information must be written in language that is concise, clear, and consistent. See *The Digital Style Guide* for information on Digital style.

- Completeness

  In designing and creating the user information, the user information team has to decide what material is necessary and sufficient for users to accomplish their tasks. For example, all necessary steps in a procedure must be documented, and all requirements for a product's safe installation and use must be clearly described.

1.2 User Information Team

For user information to meet its goals, the **user information team** must contain members who are responsible for writing, editing, graphics, and production. All the team members must be involved from the planning stages onward, or important considerations may be overlooked. In most large publications groups at Digital, different individuals are responsible for writing, editing, graphics, and production. However, in smaller groups, these functions may not be separated. For example, one individual may work as the writer and rely on peer reviews for editorial comments. In other groups, one individual may be responsible for all the functions.

Whatever the organization of the group, the functions described in the following sections need to be considered in the process of planning and creating user information. While it may be easy to say that writers write, editors edit, graphic designers design, and so on, the roles are complex, and the specialization that each function brings to the team is important.

1.2.1 Writing

The writer is responsible for creating and revising the user information. The writer is the main contact with the technical experts. The writer is responsible for gathering the information contained in the project plans (see Chapter 3) and synthesizing that information so that the user information team can design the information set. Once the team designs the information set, the writer is responsible for creating the user information plan and having it reviewed (see Chapter 5).

Because of the increasing relationships among products, the writer may also be responsible for working with other information teams to develop material that shows how several products are used together (**cross-product** information).

As the project unfolds, the writer goes through the intense process of turning technical requirements and specifications into information that meets the criteria of accuracy, appropriateness, accessibility, clarity, and completeness. During this phase, the writer works as an interviewer, talking with the technical experts to clarify features and functions, the way those items work, and their interrelations. The writer may also work with the technical experts on the design of the user interface. The writer also tests the product, creates and tests examples, and works with the other team members to decide on appropriate artwork. The writer must also decide how to link related information (particularly important in online information). In most groups, the writer also creates the index entries during the writing cycle. The writing cycle is iterative: the writer designs the information based on the audience

and product research, creates the material, tests it, and revises it based on the testing results.

As the information takes shape, the writer is responsible for ensuring that the appropriate people review the material, scheduling the reviews, and incorporating comments from those reviews. This process is repeated for each review cycle. See Chapter 6 for details on review cycles.

As the project nears completion, the writer is also responsible for making sure that the information files are coded correctly for final production. The writer collaborates with the production group throughout the cycle to ensure that the files will be ready to turn into a finished product.

The writer's responsibilities do not end when the draft is delivered for production. The writer must be available to answer production questions that may affect the technical accuracy of the information and to handle last-minute technical changes. In addition, the writer works with the rest of the team to close the project: ensuring that files are correctly archived, that there is a post-production meeting if needed, and that someone is responsible for answering user queries about the finished user information. See Chapter 8 for more information on project closure.

Writers, therefore, must bring the following expertise to the job:

- Experience in the craft of writing and a knowledge of different methods for creating effective user information
- Research, analysis, and interviewing skills
- Technical skills, both in the products being developed and in the tools used to create the user information
- Project and time management skills

1.2.2 Editing

Editors work with the team to ensure that all aspects of quality, from the writing style through the finished product, are considered throughout the cycle. Editors typically fill the following roles on the team:

- Advisors on how to organize and present information to fit the needs of users, including online navigation
- Experts on all aspects of language use, including style and word choice in addition to grammar, mechanics, and punctuation
- User advocates, acting as *first users* to test the effectiveness of information
- Experts on standards and other means of achieving consistency, including the development of conventions and glossaries

- Advisors on ensuring that information is written for an international audience
- Advisors on the total process, from planning through manufacturing, with an understanding of the impact of various actions on the total process

As part of the information team, the editor actively participates in planning the information. The editor raises questions about the appropriateness of the scope, organization, and methods of presenting information for the defined audience. In addition, the editor provides expert advice on packaging and on standards. The editor also contributes to the user information plan, making sure that it is complete and well written and that schedules and packaging plans are manageable and correct.

During the review cycle, the editor works with the writer to perfect the information, both through informal and formal reviews. Ideally, the editor is able to look at drafts several times to concentrate on different levels:

- *Developmental editing* for the organization and scope of the material
- *Substantive editing* for the style, tone, and accuracy of the writing
- *Copy editing* for the consistent and correct use of grammar, punctuation, mechanics, and formatting

See Chapter 6 for further information on what editorial reviewers look for.

During production, the editor works closely with the production group to ensure that the information is reproduced correctly with the proper format and meets the standards for finished products. See Chapter 7 and Appendix A for further information on production and on manufacturing standards.

1.2.3 Graphics and Production

Graphic designers and production specialists are the experts in graphics and design, text formatting, and tools.

During the planning stages, the graphics and production experts can help the team decide which text and graphics tools are appropriate for the type of work being planned. In addition, they can work with the team to develop different presentation strategies, a key factor as the need for more concise and more graphic information increases. In addition, the graphics and production experts also ensure that schedules are sufficient for the type of work needed during production and manufacturing; they also advise the team on packaging and manufacturing.

As the project develops, graphic designers and production specialists work with the information team in various ways:

- Selecting formats and page designs and creating new formats and designs when appropriate
- Helping to decide what technical illustrations are needed and developing them
- Helping to decide what other graphic elements are needed (such as posters or cards) and developing them
- Defining symbols and icons to be used in the interface and in the user information
- Solving problems in text formatting
- Testing information source files for correct coding

In addition, the graphics and production experts can also work with the engineering team to improve the visual impact of the user interface.

During production, production specialists ensure that the information is formatted correctly and meets the quality standards for the distribution media. See Chapter 7 and Appendix A for further information on production and on manufacturing standards.

1.2.4 Other Functions in the User Information Team

Depending on the project scope and complexity, the user information team may need to consider additional areas of responsibility beyond writing, editing, graphic design, and production. Again, these functions may be performed by existing members of the information team or by other individuals.

For large projects with multiple writers, there is often a project team leader. The project leader's responsibilities may include:

- Keeping track of all project documents and discussing changes with the other members of the information team.
- Finding out about new technologies and procedures that are relevant to the user information effort.
- Writing, revising, and obtaining approval of the information plan. The project leader may delegate responsibility for parts of the plan to other members of the information team.
- Helping management make writing assignments based on the project needs and the skills and interests of the writers.

- Coordinating the overall information schedule, including review dates and the progress of work by the different writers.
- Coordinating the reproduction and distribution of drafts for review.
- Devising contingency plans for changes in project focus or schedule.
- Helping writers by:
  - Clarifying technical concepts or directing the writer to the right resource
  - Helping to prepare work schedules
  - Explaining project goals, risks, contingencies, and user information needs
- Establishing and maintaining the flow of information between the information team and other groups (technical team, product team, and so on).
- Representing the information team at technical team or product team meetings.
- Presenting plans or status in reports and at project team meetings.
- Working with related groups to coordinate schedule and cross-product interdependencies.
- Coordinating with third-party representatives.
- Assisting in the professional development of more junior team members.

If the information is being **localized** (translated or modified for a specific region), someone on the information team must work with the group responsible for the localization. This person is usually called a **translation coordinator**. The translation coordinator's tasks may include the following:

- Negotiating file transfer dates
- Ensuring that drafts of plans and the information are made available to the localization group representative
- Reviewing any plans for localization and translation developed by the localization groups
- Reviewing all user information to ensure compliance with applicable internationalization standards and guidelines
- Ensuring that text and art source files are made available to the localization teams in a timely way

1.3 Product Team

The user information team is part of the larger product team (sometimes known as the program team). This team may include representatives from the following functional areas:

- Customer services: Provides the link between the field and engineering in developing solutions to customer problems
- Engineering: Designs and develops the product
- Manufacturing: Replicates and distributes the product to customers
- Marketing: Analyzes the market and researches the product needs of customers
- Product management: Organizes the product development cycle, prepares the business plan, and gathers product requirements
- Quality assurance: Tests the product to make sure it meets established standards
- Sales: Sells products and packages to customers
- Training: Develops and conducts courses for customers and employees
- Usability engineering (human factors): Helps the technical team increase the usability of the product (hardware or software), including ergonomic hardware design, interface design, symbols, screens, and packaging

For more information on the function of these groups and their responsibilities in the product development cycle, see *The Digital Guide to Developing Software*.

Section 1.4 discusses the changing nature of Digital's business, with its increased emphasis on open systems, multiple platforms, shorter product development cycles, and so on. Because of these changes, external vendors and customers are becoming more involved in influencing product design and in providing feedback on product prototypes early in the development cycle. This involvement may extend the concept of the product team to include external vendors and customers.

1.4 Changing Environment

This guide provides a snapshot of the current processes for developing user information. However, both the types of information needed and the methods of supplying information are changing. The following sections discuss these changes.

1.4.1 Strategic Directions: Products, Services, and Solutions

Digital's strategy is to deliver distributed computing power to a variety of customers, large and small, worldwide. Traditionally, customers purchased hardware, software, and documentation — products — for one of Digital's operating systems. Today, Digital supports networked computing on a variety of operating systems, or platforms. Digital is also developing options to protect and enhance customers' investment in their purchases from Digital and from other computer manufacturers. These options include training, services (such as customized software), and solutions (large integrated systems of components packaged for specific business markets).

Open architectures offer yet another opportunity for Digital to support the customers' ability to integrate information management worldwide. In this open environment, Digital shares product information with other companies early in the product cycle. The supporting information consists of plans, architectural guidelines, functional specifications, and similar pieces that in the past were circulated only internally. However, this product information is now the major, and sometimes the only, criterion available for judging Digital's technology. In addition, in an open environment, Digital must provide not only a user interface but also an application programming interface that lets others modify, build on, or even recreate the user-level characteristics of the product.

These trends have an impact on information development:

- The user information team must design information for multiple platforms. This requirement means making decisions about balancing the need for concise explanations for using the product against the need to handle platform-specific items (such as differences in terminology and syntax). For details on creating user information for multiple platforms, see the *NAS Guide to Documenting Multiplatform Products* and *The Digital Style Guide*.

  In addition, in an open environment, Digital must be ready to exchange information with, sell information to, or buy information from other vendors. Who the vendors are, or which projects have such requirements, is not always clear at the beginning of the project. Therefore, following standard source formats and style guidelines is important to enhance the opportunities for sharing information.

- Open systems intended for worldwide use also require keeping current with different, and sometimes conflicting, international standards. While no individual can possibly keep up with all developments, organizations need to think about how to provide information in a timely and orderly way to the people who need it. Groups must also actively work with other vendors and standards bodies to influence standards and conventions.

- The open systems environment also means that Digital has the responsibility for providing different types of information in earlier stages of the product cycle. Information teams must be able to develop product information before the product exists. The teams must also be able to develop low-level information for audiences that intend to modify the product as well as higher level information on how to use the product.
- The increased emphasis on providing services and solutions may also mean an increased demand for providing customized information packages for specific customers. This demand may create new revenue opportunities through selling the team's expertise, but it also means understanding that information is a commodity, which is a change in how information providers think about their services and requires expanding skills for working with customers. In addition, because customers use a wide range of tools from different vendors, information providers also need to know about the advantages and disadvantages of a broad range of tools.
- Writing for an international audience requires an understanding of different cultures and practices. The information team must design information that can easily be used in different countries or modified for different countries. See the *Digital Guide to Developing International Software* and *Developing International User Information* for details on designing international products.

1.4.2 New Deliverables

The line between product information and the product itself has blurred as advances in publishing and training technology promote the integration of product information into the product itself. In the past, documentation groups primarily created books, and training groups developed standard classroom (lecture/lab) training. Today, documentation and training materials consist of information that is integrated into the product itself or accompanies the product. Different types of information include:

- Books of all types, available as hardcopy documents or on a CD–ROM (compact disc read-only memory)
- Computer-based instruction (CBI) and other training materials
- Online help and learn modules built into the user interface

The entire package of online, integrated, and hardcopy documentation is called the **information set**.

The user information team needs to consider how much information to present and how to present the information. The information team must also decide whether the information should be presented on line or in hard copy. For example, should the information be presented in a book or in the online help? See Chapter 4 for more information on designing information sets.

In addition, if customer training materials are needed, the user information team and the training team must share information to avoid redundancy and ensure consistency.

1.4.3 Advances in Information Delivery

The last ten years have seen an explosion in the availability and sophistication of different publishing tools. Text, art, tables of contents, and indexes are all routinely created and processed on line for a variety of output devices.

In addition, there is a definite trend towards moving information from hardcopy books to other forms of online information. The reasons for this move are numerous:

- More sophisticated systems make it possible and desirable for users to have information about the user interface available while they use the interface.
- Users are aware of the number of books they receive with a product, the number of pages, and the cost. Some customers feel that more pages in an information set means the product is more complex, and, therefore, harder to learn and use. While it may well be that the product's complexity requires extensive information, the number of physical pages may prejudice the customer against the product.
- Information teams need to consider the cost of manufacturing hardcopy information, comparing it to the cost of online information and weighing that difference against the customers' expectations.

The next few years will bring significant developments in hypertext navigation, content-based retrieval, and libraries of information modules. (These trends are touched on in this guide, but, because they are still evolving, they are not discussed in detail.) In addition, multimedia delivery will also become common, and this, too, will have a great impact on the process of designing and developing user information.

1.4.4 Changing Methodologies: Modular Design

The changing environment also affects how information is created. Customers need computing solutions that work across a variety of platforms and networks. This need means that user information, like products, must cross platforms, products, markets, and audiences.

To support the need to package and repackage system pieces, engineering groups use modular programming techniques. Concentrating on modules helps them eliminate redundant code, allow incremental compiling, more easily revise and maintain code, and encourage an open, compatible design.

Information groups now face similar requirements. The growing emphasis on customization, different delivery media, and different markets increases the need to package information in different ways with relative ease and efficiency.

Modular information design is a method of creating self-contained, reusable, easily maintained pieces of information. By limiting the scope of a piece of information to a particular topic and type, information groups can create information that is easily reused and more accessible. In addition, modular information makes it easier to target specific pieces of information for translation and can dramatically reduce the costs of local language translation. (See Section 4.1 for a further definition of a module.)

The terms *module* and *modular documentation* have, in some ways, become the latest jargon in technical information. However, modular information is not a new concept. The best writing in the industry has *always* been modular; that is, it has always been coherent, addressed a given topic, and been self-contained.

Modular information offers the following advantages:

- Supports the need to reuse information

  When writers think about information in terms of owning and developing a book, the sections and chapters they prepare are often tightly bound to the organization of the book itself. A modular approach emphasizes developing topics that users need and underscores that the topics may be appropriate in a number of contexts.

- Emphasizes careful content development

  An effective module is the result of good analysis during the planning stages, specific scope, and thorough team review. If done well, it is also a sign of information expertise or control over the material. Writing professionals who are topic experts know their material. Knowledge and control help produce terse and self-contained information.

Modules are potentially more manageable than books. Writers can be more thorough and efficient when writing topic modules because a modular approach demands focus. Focus also makes topic modules easier to review and refine.

- Supports customizing user information

  Because the process begins with identifying a pool of topics rather than a book, it is relatively easy to create any number of variants (customized information elements) by selecting from the pool. Information teams can create customized elements by providing the modules needed by particular users. In the ideal system, customers can also change, delete, and reorder modules as well as add their own modules.

- Facilitates reuse and sharing of information

  Once a discrete unit of information exists, it can more easily be reused in many information elements: a help system, book, CBI, marketing document, and so on. Modules can be passed from one information set to another.

- Eases revision and maintenance issues

  Clear boundaries between pieces of information help writers to identify and group like and unlike, stable and unstable pieces of information. On a simpler level, when information is isolated in a specific topic module, revisions and updates of the topic module can be performed only once by the module owner. The topic owner can then notify other users of the module of its changed status.

- Encourages consistency across information sets

  Writing information once and then reusing it as needed reduces inconsistencies in terminology and presentation. Writers spend less time creating the same material in different words and more time refining the topic modules on which they are experts.

- Reduces unnecessary duplication across information sets

  A modular design approach encourages information teams to make conscious decisions about which pieces of information to use and how best to arrange them to provide context for specific users. There are instances when repetition is necessary and desirable. A modular approach ensures that decisions in favor of information reuse are logical, conscious design choices made in support of users.

The new methodology also means changes in tools and the work environment:

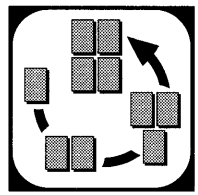
- Information groups will need tools that give users multiple ways of accessing information.

- As teams share sources, they need to be able to perform many different functions on the same modules (moving, adding, copying, linking, and so on).
- In such an environment, the meaning of ownership must change. Modularity suggests a new work etiquette for sharing information.

Some of these issues can be handled by training and new guidelines, while others involve changing the way groups think about their work.

Part II
Process

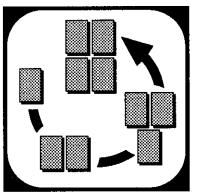
The chapters in this part discuss the following topics:



- Overview of the information creation process
- Audience and product research
- Information set design
- Information plans
- Draft and review process
- Production and distribution
- Project closure

2

Overview of the Information Creation Process



The process of creating user information is crucial to the success of the information. Having a clear and consistent process helps to ensure that:

- The right people are involved in planning and decision making
- The information is designed as part of the product and not as an after-thought
- No steps are forgotten in the pressure to finish the project on schedule

The information creation process is part of the overall product creation process. Some projects within Digital follow what is known as the Phase Review Process, a formal process for managing products through their life cycles. The Phase Review Process provides a common set of planning, measurement, and implementation tools to help project teams deliver products. See *The Digital Guide to Developing Software* for more information on this process. However, whether or not a project uses the Phase Review Process, the major stages in the process are the same:

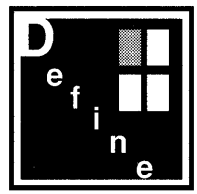
- Define
- Design
- Develop
- Deliver

Table 2–1 describes the general stages in the creation process and relates the steps to the appropriate material in this guide. For projects that follow the Phase Review Process, it also relates the steps to the formal phases.

Table 2–1 General Stages in Creation Process

Stage	Phase	Information Tasks
Define	0	Research and analyze the product and audience needs. Develop preliminary outlines of information, the topics that the user information needs to address. Begin to identify needed tools and resources. Develop the preliminary information plan. See Chapter 3 for more information on researching.
Design	1	Based on more detailed project plans, develop detailed outlines of the user information and decide how to structure the topics into an information set. Write the final information plan. See Chapter 4 for information on designing and structuring the information set. See Chapter 5 for a description of the user information plan.
Develop	2	Write, test, review, and modify the user information. Produce drafts for preliminary deliverables (such as field test deliverables.) See Chapter 6 for information on the draft and review process.
Deliver	3	Complete the user information, verify that it meets the goals defined during the planning stage, and ensure that it is ready for manufacturing and distribution. See Chapter 7 for more information on production and distribution.
	4	User information is manufactured and delivered to customers. Close the project: perform a post-project review, archive the user information, and monitor feedback from customers. See Chapter 8 for more information on project closure.

3
Researching the Project



An information set is part of the product, and the user information team must develop a strategy that is synchronized with the overall product strategy. But before you can develop your strategy, you must identify who your audience is and what your product does. You then use this analysis to decide the topics to be discussed in the product information; the analysis leads to the design of the information set, as discussed in Chapter 4.

This chapter discusses:

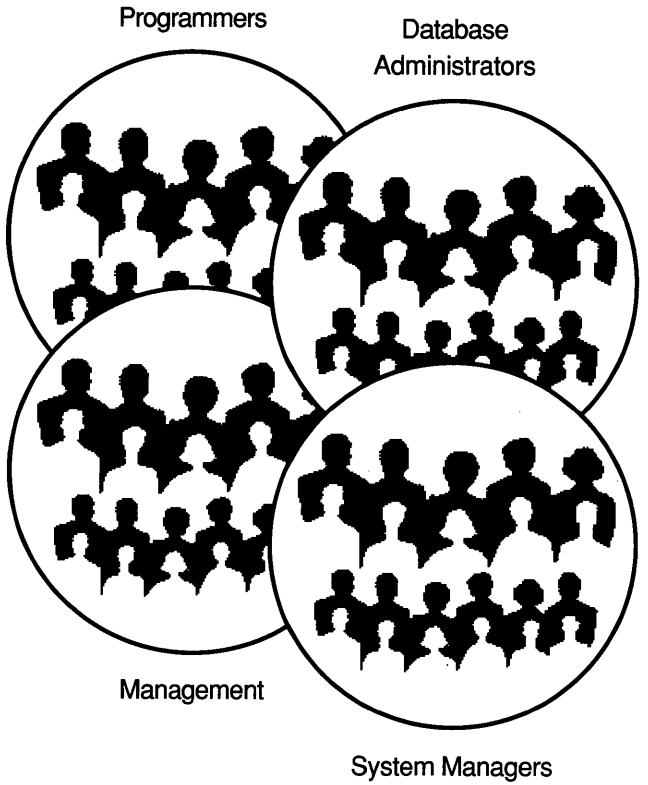
- What information you need about the audience and product (Section 3.1 and Section 3.2)
- How you can find that information (Section 3.3)
- What to consider when submitting information to a standards body or consortium (Section 3.4)

See Chapter 13 for a description of different usability studies that you may use to gather audience and product information.

3.1 Analyzing the Audience

Digital sells products to people who purchase, use, or maintain those products. Members of an **audience** use a product to accomplish similar tasks or solve similar problems. As Figure 3–1 shows, a product may have more than one audience; if so, the different audiences are interested in learning different things about the product and using the product in different ways. These different interests influence the design of the user information.

Figure 3–1 One Product, Multiple Audiences



Analyzing the audience helps identify the users' skills, characteristics, and resources. Most important, it helps identify the tasks that the users do to perform their jobs. Such analysis can then help you decide what topics to cover in the user information.

In gathering audience information, ask the following questions:

- For whom is the information intended? Customers? Third-party partners? Internal users?
- How varied are the users' skills?
  - What is their educational level?
  - What is their technical background?
  - What is their reading level?

  - Do they have any special requirements?

- What is the user environment?
  - Where will the product be used? For example, will the product be used in a large office setting, small business, or academic setting?
  - What are the standard job titles within the environment? This information helps to identify the groups of users and their skills. (However, job titles do vary across companies and cultures, so you must use this information carefully.)
  - What is the frequency of turnover? This data can help you determine how much time users have to learn to use a product.
- What are the work flow patterns?
  - What are the major work tasks? How much time is spent on tasks? Who is responsible for correcting errors? Maintenance?
  - What are the patterns of interaction? How many users have access to the information? How is data passed among users?
  - How do users find the information needed for new tasks?
  - Where do users go for information to solve problems?
  - If there is existing user information, what pieces do users find most useful? Are there pieces that they do not use?
  - How much time can users devote to initial training?
- What is the effect of the product on the users?
  - Why are they interested in using the product? What parts of the product are they interested in?
  - Does it allow more time for other important tasks? Does it establish new types of jobs?
  - Does it create tasks that are repetitious or boring? Does it force users to work in isolation from each other? Does it force them to work together in unproductive ways?

3.2 Analyzing the Product

The **product** is anything that needs to be documented in some way for one or more audiences. Products can be hardware, software, integrated systems, policies, standards, or services. Depending on the product, you need to research the following types of information:

- Product features (the essence of what the product does and the added features that distinguish the product from other company products or competing products)
- Problems the product is intended to solve
- Prerequisite knowledge, skills, or equipment users must have to use the product and each function
- Knowledge or skills users will have after using the product and each function
- Restrictions on using the product or particular functions
- Platforms the product is intended for
- Localization issues surrounding the product
- Standards with which the product must comply

As you research the product throughout the development cycle, continue to ask these questions:

- What portions of the product are visible to the users?
- Is the product new? Is it an upgrade? What similar products exist at your company or elsewhere? What was the history of the related product in your company? Is there anything significant to be learned from the information team of that product?
- What information about the product already exists?
- What software or hardware is required for using the product?
- What types of problems is the new or upgraded product intended to solve?
- Are the product functions or tasks similar to those commonly performed outside the computer environment? For example, electronic mail and text editors are products whose tasks are familiar to anyone who sends letters or writes at a keyboard. The conceptual framework for such a product does not need extensive explanation.
- How many tasks can be performed using the product? How detailed is each task? Do many tasks require subtasks?

- How will the information set be distributed? (For example, will the information be distributed with the product kit, on a CD–ROM, in hard copy?)
- Will the product be translated? Will it be localized for particular geographies? (While this may not make a difference in the content or presentation of the material, it may make a difference in the process.)

For each function and feature, ask the following questions:

- What is it supposed to do?
- What is the result of using the feature?
- What are the defaults?
- What advantages are there in the feature?
- Are there formatting or syntax rules to watch out for?
- Does this feature enhance or replace an old one?
- Will this feature be mentioned in more than one context?
- Do other publications need to be updated because of this information?

3.3 Gathering Information About the Audience and Product

Section 3.1 and Section 3.2 discuss the types of information you need to gather about the product and the audience. The following sections discuss sources of product and audience information, including:

- Using project planning documents
- Working with technical experts
- Attending planning meetings
- Using the product
- Analyzing competitive information

3.3.1 Reading Project Planning Documents

Most projects have a set of official planning documents developed by the organizations that make up the project team. The information plan developed by the information team (see Chapter 5) is part of the set of project documents.

Table 3–1 describes the project documents that may exist for any given project. See *The Digital Guide to Developing Software* for more information on these documents and how they fit into the product development cycle.

Table 3–1 Project Planning Documents

Document	Responsible Group	Description
Marketing Requirements	Product or marketing manager	Describes the market opportunities for the product. Analyzes customer needs and priorities, international requirements, and possible trade-offs. Compares the product to similar products (from both your company and other companies).
Business Plan	Product manager	Gives business metrics for evaluating the potential of a product in comparison with other similar products. Reviews the product strategy, business viability, and required investments.
Product Requirements	Product manager	Describes the goals, capabilities, and characteristics of the product in measurable terms. Describes in detail the product features that satisfy the market requirements and sets priorities for the features. Defines the technical requirements of the product, including methods, tools, processes, and metrics.
Product Specification (Functional Specification)	Technical team	Gives a detailed description of what the product is, its functions, operations, and applications, including the user interface. Describes the product goals, actions, and metrics for success as well as the user environment, product compatibility, and standards conformance. Used as the basis for the information and training plans.
Design Documents	Technical team	Provides a physical model of how the technical team will design, develop, and integrate the product described in the product specification. Describes the data flow, data structures, interfaces, and design criteria for the system, components, and modules. Specifies testing procedures. Primarily for the technical team.

(continued on next page)

Table 3–1 (Cont.) Project Planning Documents

Document	Responsible Group	Description
Development Plan (Project Plan)	Technical team with other functional groups	Describes in detail how the product will be developed. Describes the tasks to be completed, the resources needed, the milestones, and so on. Includes the plans from other functions, including user information.

3.3.2 Working with the Technical Team

The technical experts on the project are your main sources of information and can help you understand product dependencies and interrelationships. It is important that you establish a strong relationship with these experts from the beginning of the project so that you can share information and feel comfortable in asking questions and raising problems.

In talking with the technical experts, try to gain a broad interpretation of the product and its goals. Gaining the perspective of several experts on the project helps you to get different viewpoints.

Act as a user advocate, and ask the types of questions that influence the product design, such as:

- Do we have to allow for compatibility with the previous version if this feature is implemented?
- Why are there two different definitions of this argument?
- Why are there six new qualifiers for the LIST OBJECT command in one utility but only two new qualifiers for the same command in the other utility?
- Does this feature have any consequences that might not be obvious to the user?
- Is this feature or statement consistent with others in the product? For example, are some syntax keywords joined with underscores while others are not?
- How can we design the user interface to make the most of both the features and usability?

If you are unsure about the answers, keep researching until you understand the information. If you cannot understand the material, it is likely that the users also will not. The project team may have to reconsider the product design.

3.3.3 Attending Planning Meetings

Attending planning meetings is an important way to keep informed about the status of the project. While each member of the information team does not have to attend all meetings, it is important for the team to be represented at all appropriate meetings.

Formal and informal technical meetings give you information about the product structure and the relationship of the components. The meetings may also give you a better understanding of potential problems for the user and the opportunity to suggest ways to make the product easier to use. In addition, participating in such meetings helps build your credibility as a working member of the project team and keep information concerns in the foreground.

There are also formal meetings (sometimes called program team meetings) of representatives from all the groups that contribute to the product. Because the user information is a part of the whole, you need to keep track of the whole project. The program team meetings can give you the larger perspective.

Not only does this perspective help you design information that fits intelligently with the product, but it also helps you understand where problems may arise during the development cycle. Unresolved problems tend to appear again at later points in the cycle; if you are not aware of them, you may be caught by surprise without a contingency plan.

In addition, you can use these meetings to build working relationships with representatives from marketing, sales, customer support, training, field engineering, and manufacturing. These individuals contribute different ideas and expertise to the project, and you can use their knowledge to broaden your view of the product and the audience. Working with the representatives from the different groups also helps to ensure that your plans do not conflict. For example, the documentation and training teams may need to work together to ensure consistency and avoid redundancy.

3.3.4 Using the Product

One of your most important sources of learning about the product is using the product. An early version or prototype is often available early in the process; start using it as soon as possible and continue using it throughout the product development cycle. The prototype may not work like the final product, but it can give you a sense of how the product is intended to work.

Of course, because the product is being created, you may not have access to a working model. Continue to raise this as an issue affecting the accuracy and usability of the user information. If there is a previous version, use that version and continue to research the differences between the old and new versions. If you have access to a related product, use that product.

Using the product helps you present information clearly, cover all needed topics, and exclude unnecessary topics. Your experience in learning the product means that you can structure the information to help users learn more easily and thus be more productive sooner.

Because products rarely work in isolation, you may also need to learn about more than your particular product. You should learn about the environment in which customers use your product and may need to learn about other products customers use with your product. For example, a database language may be embedded in a host programming language. Learning about both languages helps you write accurate and useful examples.

3.3.5 Using Other Sources of Information

Reading the project documents, interviewing the technical experts and other project team members, and using the product are major sources of information about the product and audience. However, there are other important sources of information that can help you complete your research:

- Information team

  Other information teams in your own or other organizations may have worked on similar products. Even if they cannot help you with the technical details, they may be able to give you the benefit of their experience or lead you to other individuals or other customer or support materials.

- Customer visits

  Your most important source of information about customers is direct contact. Visit user sites, talk to customers on the phone, visit field test sites and participate in field test training, and attend customer courses. Direct customer contact lets you find out how users use the products and user information they already have, how often they use it, and what they do not use. Chapter 13 describes techniques for obtaining feedback from customers.

- Internal users

  You are in daily contact with other employees who regularly use your company's products to do their jobs. Talking to them and observing them can give you insight into how people use products and user information. In addition, internal users may have used other companies' products and can provide some comparison. See Chapter 13 for techniques on working with internal users.

- User groups and Special Interest Groups (SIGs)

  Your company may have a user organization whose members can be a valuable source of information. For example, DECUS™ is the user organization formed by Digital customers to represent their interests to the corporation and to exchange information. DECUS maintains many Special Interest Groups (SIGs) for different topics, such as the Artificial Intelligence SIG, the Data Management Systems SIG, and the Hardware and Micro SIG. Many SIGs publish newsletters and hold regional and national conferences. The SIGs generally respond enthusiastically to questions. Work with the engineering and product managers to contact the SIG most closely related to your product.

  Professional groups in your area may also have special user groups related to your products.

- User feedback reports

  Depending on their service contracts, users may send in problem reports or work with a support group if they find serious problems with a product. (For example, Digital software users may send in Software Performance Reports [SPRs].) The engineering or support group forwards the problem reports for the user information to the appropriate user information group, which often keeps the reports on file.

  Many groups also include postpaid mailers at the back of each book so that users can comment on the book's usefulness and accuracy. These cards are also kept on file. Both the problem reports and the comment cards may give you information about potentially troublesome areas.

  The information group may also have sent questionnaires to customers soliciting feedback about the user information. These are also a useful source of information. See Chapter 13 for information on designing questionnaires.

- Service and support groups

  Representatives from service and support groups work with customers and can give you valuable information about the types of problems that hinder customers and field representatives in doing their work. They can also provide information about other reports or online databases that may contain information on how customers use our products and user information and the questions customers have about the products and user information.

- Trade publications

  Trade magazines and books about computers can acquaint you with the terminology and issues of the industry as a whole and particular markets or applications.

- Corporate libraries

  Your company may maintain a corporate library, which can be an important source of specialized information, such as competitive literature, market research, trade journals, and so on. Some companies also maintain online libraries of marketing and competitive information.

- Courses

  Your company may offer courses to help internal employees or customers learn to use its products. Such courses may range from short introductions to intensive technical seminars. Check to see if customer courses are open to employees; attending a customer course gives you the opportunity to talk with customers about their work and about the user information. Employee courses give you access to specialists and other employees who work directly with customers so that you can better understand the customers' problems and how the specialists in the field use your product information. If your company does not offer its own training courses, you can also look for training offered by local colleges, professional organizations, or even some computer stores.

- Product management

  The product manager is responsible for preparing planning documents that outline the product priorities, goals, market needs, and international requirements. The product manager also coordinates the product cycle, working with the multiple groups on the project team. In addition, the product manager works with customers and contributes to the long-range strategy for the product family. The product manager, therefore, can give you useful information about the product audience as well as a strategic overview of the product.

3.3.6 Analyzing Competitive Information

Studying the sales literature and user information for related products from other companies is one other source of information about your audience and the product environment. Looking at competitive literature has two purposes:

- It helps generate ideas. The way in which a competitor organizes and formats information can give you both good and bad models for your own information.

- It helps define the users' expectations. One working definition of quality is the distance between what the user expects and what the product does. Looking at competitive literature may help to define what expectations users have for your type of product.

Use the project planning documents to understand who the major competitors are for your product. Work with your marketing representative and your company's competitive literature library to borrow copies of the user information. (Other members of the project team may also have copies that you can borrow.)

First glance over each piece to gain an overall impression of its quality and how the information is organized. Then each member of the information team can go over one or two pieces from each set.

In examining the literature, look for the following points:

- Visual impact

  What is your general impression of the information's quality and attractiveness? Are there elements of the layout or physical packaging that are particularly effective?

- Organization

  How is the material arranged? Do the divisions separate the subject in useful ways or indicate topics you might not otherwise think of? Is the pattern of development easily recognized? Can users easily find what they need? What elements contribute to that ease of navigation?

- Quality of writing

  Does the text use stylistic or syntactic techniques that can help improve your text? Are there problems you can avoid? What is done especially well?

- Graphics

  What graphics are used? How are they integrated with the text? In what way do they contribute to the usefulness of the text?

- Syntax

  How are commands, statements, and so on depicted? Is the approach easier to understand than the one you were considering? What problems might the approach have?

3.4 Special Considerations: Submitting to a Standards Organization or Consortium

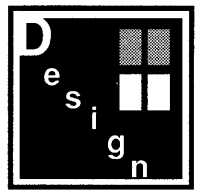
If your product is part of a submission to an external standards body or consortium (such as the Open Software Foundation™), you need to consider some additional items. Determine as early as possible which components of the information set will be submitted. Work with the project team to understand the requirements and expectations. You may also need to work with your legal representative if there are questions about sharing confidential information.

When considering the requirements, think about the following information:

- Are source files as well as output files required?
- If source files are required, what are the formatting constraints?
- What graphics format is required?
- What type of online information is required?
- Is hypertext required?
- What are the style guidelines?
- Are there any postsubmission requirements, such as updates or corrections?

4

Designing the User Information Set



As the information about your product and audience becomes more concrete, you need to begin designing your information set. You are unlikely to complete the final design in one or two sessions. Rather, you continue refining the design throughout the product development process.

Design is an iterative process. As product and audience requirements change, the information set design evolves both during the product cycle for one version and across versions. However long the cycle, the design process follows several steps:

1. Design and structure the user information based on the product and audience research.
2. Develop drafts of the information. In the preliminary stages, the drafts may be as skeletal as the topic title, the topic sentence, and an outline of the contents.
3. Test the effectiveness of the design and the usability of the information at various points throughout the product cycle. Such checks can identify problems with the overall design as well as with the information itself. Your testing may be as informal as soliciting review comments from the technical experts or as formal as customer-site visits with planned interviews.
4. Refine the user information based on testing feedback. Improvements to the information set are continuous. You may gather more information that gives your a better understanding of the product or a clearer view of the users' needs. There may be changes to the product as the technical experts refine their work or changes in your group's methods and technology.

This chapter discusses concepts that you can use in designing your own information set:

- What a topic module is (Section 4.1)
- How to identify topic modules (Section 4.2)

- Information types (Section 4.3)
- Information architecture (Section 4.4)
- Relationship between modules, design, and architecture (Section 4.5)

Section 4.6 describes a case study of an evolving information set design. The case study follows the development of an information set through the stages of design, testing, and refining and shows how the information team used the concepts of modular information and architecture to develop the evolving design.

4.1 What Is Modular Information?

As noted in Chapter 1, today's environment increasingly stresses the need for modular information. But what *is* modular information?

A **module** is a cohesive unit of information. In its simplest form, a module is equivalent to a coherent section. Thus, a module is the basic building block of the information set.

Modules contain different types of information: conceptual, reference, and task-oriented. These information types are discussed in Section 4.3.

Modules share the following characteristics:

- A module describes a complete task, concept, or feature. A module is self-contained.
- The length of a module varies, but the goal is to be as brief as possible, especially when describing task or reference information.
- Most modules include a title, a topic sentence indicating scope, and the topic content (such as task or reference information). Many modules also contain some sort of illustrative material, such as a table or figure, that further explains the content of the module. A module can also contain a list of related topics.
- A module can consist of text, graphics, lists, or tables. A single module may contain more than one of these formats.
- A module can contain other modules, refer to other modules, or stand alone.
- A module has attributes such as a source name, outgoing and incoming links (cross-references), and, most important, a statement of the information type contained in the module.

- A module can be reused or shared by different components in different combinations.

4.2 Identifying Modules

There are many different approaches to creating modular information. Some methods require considerable training by third-party companies. Many of these companies have trademarked names and strategies for preparing modular information.

Check with your supervisor and manager to learn your group's practice regarding modular information. What methodology is the group using? What technology is available that will influence your decisions in this area? What training is available in your group? See Section B.2 for more information.

Whatever methodology you use, your first step in designing modular information is identifying the topics needed for your product:

- Use your research into the product and audience as the base for the list of topics. Some people find it useful to also hold a brainstorming session with key members of the project team. The purpose of the meeting is to identify and clarify the intended audience, the tasks users perform, and other necessary topics. Whatever method you use, ask the following types of questions:
  - What does each audience need to learn or understand about the product?
  - What are the tasks associated with each segment of the product?
  - Do certain product requirements suggest particular topics? For example, the product requirements may state that this is a new type of environment and that users are not familiar with it. This requirement suggests that the user information needs to make the audience familiar with the product environment.
- Continue to expand each topic with increasing detail. For example, if one of the general topics is "Show users how to use summary queries," more detailed topics might be:
  - What is a summary query? What does it do?
  - How to compute a total
  - How to compute an average
  - How to find minimum and maximum amounts
  - How to count rows

- How to group rows
- How to limit groups

Each of these topics might also suggest reference topics for the commands that perform the functions.

- Continue refining the topics until you are satisfied that you have a firm understanding of each topic, the audience for the topic, what the audience already knows about the topic, and what the audience needs to learn about the topic.

  The more clearly defined the modules are, the easier it will be to arrange, rearrange, and customize the information.

- Make sure that the project team members review the list of topics. You can do this informally (by circulating the list for review or in a meeting) or include the topic list in the preliminary information plan.

4.3 Identifying Information Types

In addition to identifying topic modules, designing your information set also involves identifying the types of information you are providing. Each module fits in one of three major categories:

- **Conceptual information**

  Describes the product environment and gives users the context of the product. It may explain how different products are used together in certain applications. It may give an overview of product features, explain the components of the product, and generally describe how the components work together.

- **Task-oriented information**

  Explains how the user can accomplish a particular task using a procedure or series of procedures. Task-oriented information uses many examples that walk users through the process; in many cases, the examples form a sample application that users can modify for their own applications.

  Tutorials are a specific type of task-oriented information intended for users unfamiliar with the product. They guide the user through a set of basic procedures using predesigned examples.

- **Reference information**

  Provides details about particular entities, explaining how they are used, their parts, restrictions on their use, and other details that help the user make the fullest use of the product.

Low-level modules contain only one type of information. For example, a reference module should not contain conceptual information. However, you may combine low-level modules to form a larger module. For example, the case study described in Section 4.6 contains components on database design and definition. This information is both conceptual and task-oriented:

- The conceptual information deals with high-level database design instruction, such as normalization.
- The task-oriented information deals with the procedural, "how-to" steps for implementing database design.

An information component describing database design and definition may thus contain both conceptual and task-oriented modules.

4.4 Information Architecture

An **information architecture** describes an information group's vision of the overall structure of information and how it is used. An architecture gives guidelines or a set of general principles for the placement of information types in an information set, helping information teams to eliminate unnecessary redundancy and inconsistencies.

Table 4–1 shows an example of an information architecture that organizes hardware information by task and information type.

Table 4–1 Organizing Hardware Information by Task and Information Type

Task Grouping	Primary Information Type	Audience	Description
Hardware concepts	Conceptual	Managers and company officers responsible for planning and buying equipment. All users who will need to introduce the new product or use the product in the future.	Gives information that helps customers evaluate the hardware for its suitability to the customers' needs.

(continued on next page)

Table 4–1 (Cont.) Organizing Hardware Information by Task and Information Type

Task Grouping	Primary Information Type	Audience	Description
Site preparation	Reference, task-oriented	Customers and service personnel who select sites and plan hardware installations.	Describes and explains the procedures for planning and for preparing a site for the product. Gives the specifications for items such as temperature and humidity tolerances, space, cabling, electricity, and so on.
Installation	Task-oriented	Customers and service personnel.	Describes the product and its parts and explains the procedures for installing the product.
Operations	Conceptual, reference, task-oriented	All users.	Describes the product components and functions, explains the procedures for different operations, and explains maintenance and troubleshooting procedures.
Servicing	Task-oriented	Customers and service personnel.	Explains the procedures for service and maintenance.
Programming	Reference, task-oriented	General users and programmers.	Gives tutorial information for general users who want to make the most use of the product features. Also gives reference information for experienced programmers writing code to incorporate the product within a system.
Technical	Conceptual, reference, task-oriented	Programmers and service personnel.	Describes the technical details of the physical device, data flows, testing, error handling, and so on.
Proprietary technical	Conceptual, reference, task-oriented	Digital service personnel.	Describes the proprietary technical details of the product needed for support.
Illustrated parts breakdown	Reference	Digital service personnel and customers.	Identifies field-replaceable units and parts.

Using this architecture, an information team for a complex product like a central processing unit might design an information set with a separate document for each task grouping. Another team may need to document a terminal and decides to combine tasks within a single component: hardware concepts, site preparation information, installation information, and operating instructions. However, the different types of tasks would be separated within the component.

Figure 4–1 shows another example of an information architecture, which maps information types to delivery methods, suggesting that much product information is suited to online help.

An architecture such as the one in Figure 4–1 does not provide all the answers for designing the information set; other factors also affect the design. For example, your target customers may have strong preferences as to what information you place on line and in hard copy. Similarly, the customer base may have hardware requirements that limit how information is presented on line.

4.5 Relationship Between Methodology, Design, and Architecture

Section 4.1 and Section 4.2 describe a *bottom-up* design process, working from details for a specific product. The information architectures described in Section 4.4 provide a *top-down* design, working from an overall structure, a general set of organizational principles. Good design addresses both the bottom-up and top-down approaches. As Figure 4–2 shows, the design that you create is your implementation of the architectural principles, your blueprint for building a particular information set from the product-specific topic modules. The information plan (described in Chapter 5) describes the design and how you will implement it.

Figure 4–1 Organizing Information by Type and Delivery Media

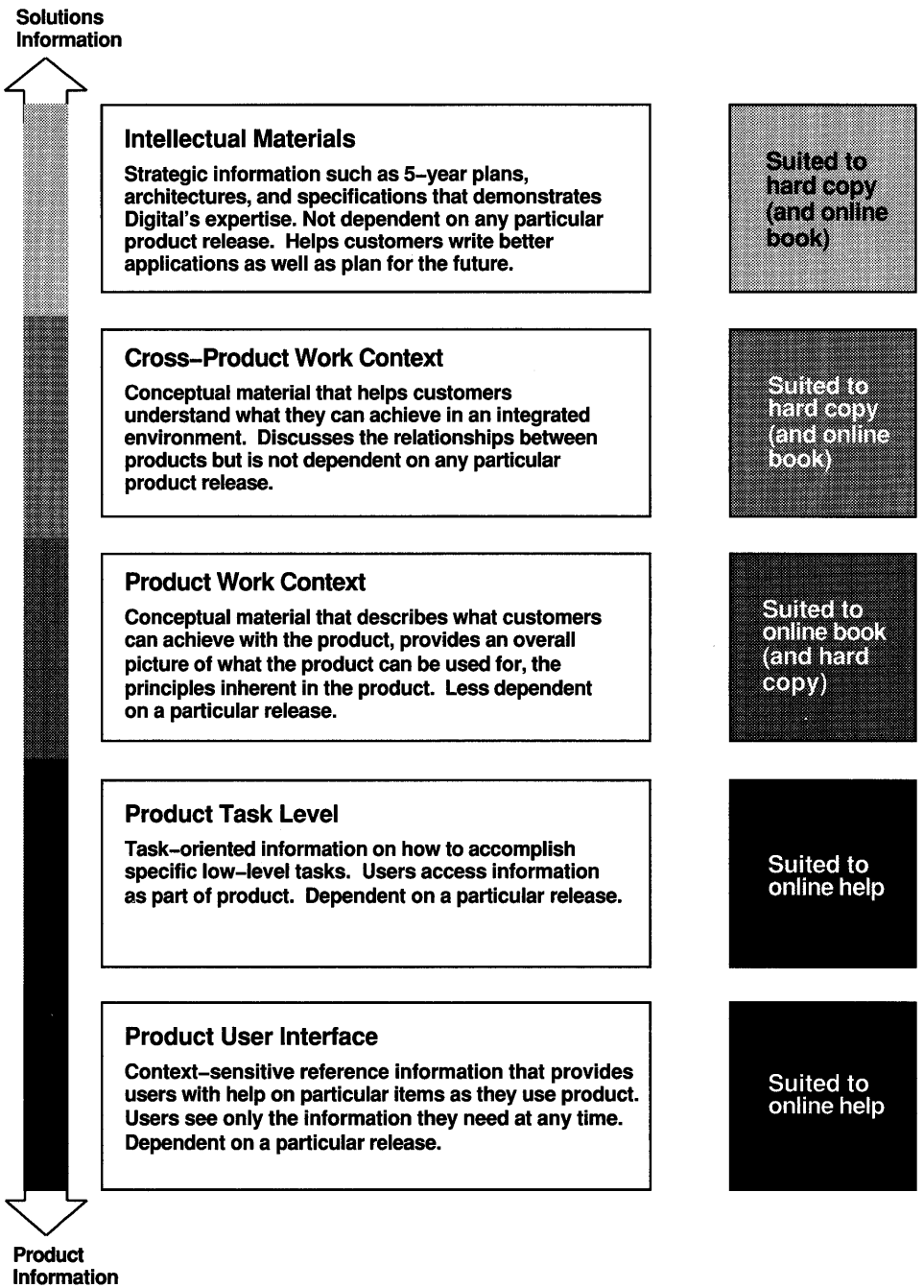
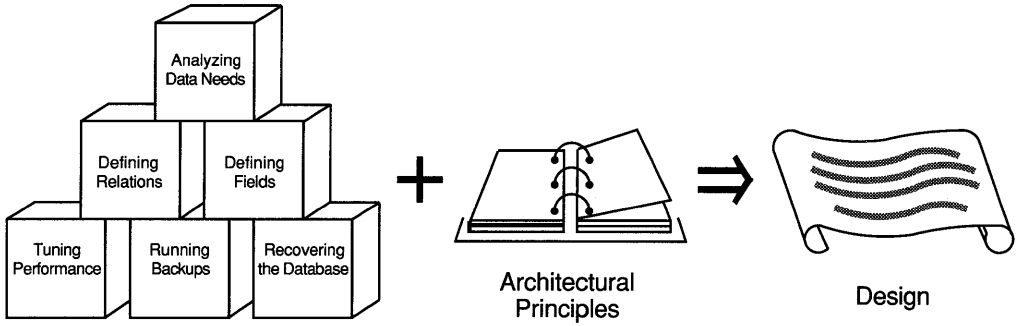


Figure 4–2 Building an Information Design



In a standardized architecture, the information team identifies specific audiences and groups sets of related tasks and concepts (such as installing, configuring, and programming) to support the work users need to do.

Users read information to understand concepts or perform specific tasks. The information team identifies topic modules and structures them in a way that supports the users' goals. Modules gain meaning in the context of other modules or in the context of the user interface. An information architecture gives the structure, or context, for the modules, and the modules become information when they are arranged in ways that are meaningful and supportive of the users.

4.6 Design Case Study: DECproduct

This chapter uses a fictional database software product, called DECproduct, as a case study in information set design.

DECproduct is a new (Version 1.0) relational database product. DECproduct can be used with other Digital products, such as transaction processing software, to help users build complex information management applications.

DECproduct has the following characteristics and features:

- Two command line interfaces:
  - The SQL language interface implements the latest ANSI standard language. This language lets users create and alter the database; insert, update, and delete data; and execute queries that select data from the database.

  - The database management language is a proprietary language. This language lets users perform backups of the database, maintain security in their system, configure their database across the network, and monitor and improve system performance.

- Two DECwindows™ interfaces:
  - The DECwindows interface for SQL is a graphic implementation of the latest ANSI standard language.
  - The DECwindows interface for database management is a menu-based implementation of the command line management language.
- Two platforms, ULTRIX™ and OpenVMS systems

The DECproduct audience consists of highly-trained programmers, database administrators (DBAs), and system managers who have considerable experience with database products.

Purchasers will generally fit in one of two categories:

- Independent software vendors (ISVs) who will write and market their own applications layered on DECproduct
- Large corporations or government institutions who will write applications layered on DECproduct

DECproduct itself will not be used as a query tool by naive users. The ISVs and corporations write the applications that naive users see.

The programmers, DBAs, and system managers use DECproduct to:

- Design a database
- Create a database
- Insert data
- Select data
- Update data
- Generate reports
- Maintain a secure environment
- Manage the database system

The following sections discuss steps that the DECproduct information team took when designing their information set.

4.6.1 Analyzing and Planning DECproduct

The DECproduct information team began by analyzing the general product information described in Section 4.6. They read all the plans and specifications generated by the members of the product team.

The team decided to use a topic/audience matrix to help them organize the information they had gathered. A **topic/audience matrix** is a grid that maps topics to be discussed to the users of those topics. (The concept of the matrix was developed by Edmond H. Weiss. See Section B.2 for bibliographic information.) The matrix is a technique that makes explicit what people often do implicitly as they plan an information set. In essence, you develop a series of progressively more detailed matrixes; the end result is the list of information modules for the product.

Section 4.6.1.1 describes how the team produced a general topic/audience matrix. Section 4.6.1.2 describes how the team refined the matrix so it was more finely detailed.

4.6.1.1 Developing a General Topic/Audience Matrix

The DECproduct information team created a topic/audience matrix to help them analyze and plan their information set. They used the following process to create their first grid:

1. Create a two-dimensional grid. Put the target audiences at the top of the grid.
2. On the side of the grid, list the topics to be covered.
3. If a particular audience segment needs to understand a topic, mark the box that links the user and the topic.
4. Examine the grid.
   - Are there any topics that had no boxes marked? If so, do not include that topic in the information set.
   - Are there any audiences that have no boxes marked? If so, analyze whether the matrix was correct. If it is, then you do not need to address that particular audience when you design and write the user information.

Table 4–2 shows the general topic/audience matrix the information team created for DECproduct.

Table 4–2 General Topic/Audience Matrix for DECproduct

Topics	System Manager	Database Administrator	Application Programmer	Management (MIS Mgr, Dept Mgr, ...)
Why buy DECproduct?				X
System components	X	X	X	X
Install DECproduct	X	X		
Maintain DECproduct	X	X		
Configure physical system	X	X		
Define database requirements		X		
Define security requirements	X	X		
Create database		X		
Maintain database	X	X		
Store data in database		X	X	
Access data in database		X	X	
Manipulate data in database		X	X	
Use query language		X	X	
Understand extensions to query language		X	X	
Integrate DECproduct with other Digital products	X	X	X	X

4.6.1.2 Developing a Detailed Topic/Audience Matrix

After the team identified the overall product topic/audience matrix, they expanded each general topic to include more detail. They again checked which audience segments needed to understand which topics. Table 4–3 shows the detailed grid for the topic "Create database" in Table 4–2. Table 4–4 shows the detailed grid for the topic "Maintain database system."

Table 4–3 Detailed Topic/Audience Matrix: Creating a DECproduct Database

Topics	System Manager	Database Administrator	Application Programmer	Management (MIS Mgr, Dept Mgr, ...)
Analyze data needs		X		
Analyze data dependencies		X		
Set up logical database design		X		
Set up physical database design	X	X		
Define database with query language		X		
Define relations, fields, and so on with query language		X	X	
Set up database security with query language	X	X		

Table 4–4 Detailed Topic/Audience Matrix: Maintaining a DECproduct Database

Topics	System Manager	Database Administrator	Application Programmer	Management (MIS Mgr, Dept Mgr, ...)
Configure database system	X	X		
Set up system security	X	X		
Run performance reports	X	X		
Tune performance	X	X		
Run backups	X	X?		
Recover database	X			

The team continued to refine each topic/audience matrix, adding topics and audiences as needed, until they were satisfied that they had an exhaustive list of topics.

As the team broke down each topic and task, they asked the following questions:

- What will users be able to do with the information? Do they need it to understand a concept? To perform a task? To understand the format of a statement? (See Section 4.3 for more information on information types.)
- How much do users already know about the topic? How much detail is needed?
- Are there multiple ways of performing the same task? Which is the preferred method and why?
- Do the topics have logical groupings and links to other topics? For example, the tasks identified in Table 4–3 form a logical grouping of similar tasks performed by the same audiences. There may be links between the system security topic in Table 4–4 and the database security topic in Table 4–3. There may also be links between those topics and the related reference information that describes the statements used to set up system and database security.

4.6.2 Designing the DECproduct Information Set

Knowing the tasks, the types of information, and the different audiences for that information, the team then began to design the information set. They began by grouping the information according to information types and using the architecture described in Table 4–5.

Table 4–5 Organizing Software Information by Task and Information Type

Information Type	Task Grouping	Audience	Description
Conceptual, task-oriented	Cross-product	All users	Describes components of different products and how they are used together to create applications. Often includes extended examples that users can customize for their own applications.
Task-oriented	Tutorial, beginner's guide, getting started	New users	Explains selected operations for users new to the product.

(continued on next page)

Table 4–5 (Cont.) Organizing Software Information by Task and Information Type

Information Type	Task Grouping	Audience	Description
Conceptual, task-oriented	User	All users	Describes how to use product efficiently. Describes procedures and capabilities, often moving from simple to complex.
Task-oriented	Preinstallation	System operators	Includes information that system operators need to know before beginning an installation. May also include last-minute information that develops after the Installation Guide and Release Notes enter production. Usually is contained in a letter packaged with the software, not the information set.
Task-oriented	Installation	System operators	Describes, usually step by step, how to install the product and verify the installation.
Conceptual, reference, task-oriented	System operations	System managers and operators	Describes the concepts and procedures for setting up and shutting down systems, system recovery, daily maintenance, system security, system performance and tuning, and so on.
Reference, task-oriented	Language	All users, but primarily programmers	Describes the structure and capabilities of a language.
Reference, task-oriented	Utilities and services	Programmers	Describes the use of utilities, services, and routines.
Conceptual, reference, task-oriented	Application programming	Applications programmers	Describes how to use the product to design and customize applications.
Conceptual, reference, task-oriented	Release notes	All users	Describes new and changed features, errors fixed, and known problems and restrictions.

The architecture summarized in Table 4–5 does not specify how information is delivered. For example, reference information may be in a reference manual and online help; reference information on commands may be summarized in a reference card, or the structure of an application menu may be shown on a poster.

After organizing the information by task and information type, the group organized the information into a series of hardcopy books as described in Table 4–6. Note that this is a more traditional approach to designing a documentation set in that it does not take advantage of the opportunity to place more material on line.

Table 4–6 Case Study: Hardcopy Information Set Design

Book	Description
Introduction to Application Development	Conceptual description of using DECproduct, transaction processing software, and other products to design applications.
Introduction to DECproduct	Conceptual description of the product and its parts, how it differs from other similar products.
Guide to Database Management and Performance	Task-oriented description of managing the DECproduct system, including: • Configuring and securing the system • Monitoring and tuning the system • Recovering the system
System Management Reference Manual	Reference guide to all the system management commands, arranged alphabetically.
Guide to Database Design and Definition	Task-oriented description of designing and creating a DECproduct database, including: • Analyzing data needs • Creating the logical and physical designs • Creating the database • Setting up database security Also includes some conceptual topics to give context for the work, such as system security or designing for better performance.
Guide to Programming	Task-oriented description of the query language, moving from basic tasks (accessing and storing data) to more complex tasks (creating databases, defining tables, and so on).

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Table 4–6 (Cont.) Case Study: Hardcopy Information Set Design

Book	Description
Guide to Query Language User and Programming Interfaces	Task-oriented description of how to use the three interfaces to the query language: interactive (including command line and DECwindows), module language, and precompiler.
Language Reference Manual	A reference to the components of the query language. Begins with a table grouping the statements functionally. The major portion of the book is an alphabetical reference providing the details on the syntax, semantics, and usage of each language element and statement.
Before Installing DECproduct	Conceptual and task-oriented information the customer needs before installing DECproduct. Needed if there are last-minute changes that affect installation but cannot be included in the Release Notes because of timing. Ships with the software media.
Installation Guide	Task-oriented description of installing DECproduct, running the installation verification procedure (IVP), and installing and running the sample database. Ships with the software media.
Release Notes	Description of new features, known problems and workarounds, restrictions, errata, information that could not be included in the information set because of timing. Available as an ASCII file on the product kit; customers can print before beginning installation.

The information team recognized that their product would operate on two platforms. This introduced two problem areas:

- How to document multiple platforms

  The team addressed how to document multiple platforms by analyzing each component of the information set to determine what percentage of the information would be platform specific. They next checked to see whether that information was intertwined with other material or if it was relatively isolated. The team concluded that the platform-specific information in all the components was isolated and comprised only 5 to 10 percent of each component.

  Because the material was so isolated and comprised such a small percentage of each component, the team decided that creating duplicate components for each platform would be unwarranted. Instead, each component would contain the information for both platforms. The team would accomplish this by preparing platform-specific information in separate modules. Each component would include the modules for both platforms, with the modules presented in succession. For example, the

query language reference manual would contain a module describing ULTRIX file names followed by another module describing OpenVMS file names.

- What information to include in ULTRIX reference pages

  The team addressed the issue of ULTRIX reference pages by analyzing what information they would produce on line. DECproduct needed online help for:

  - Each statement in the query language
  - Each command in the system management language
  - Each interface to DECproduct: interactive, module processor, and precompiler The team then analyzed which of these help topics were appropriate for reference pages. They determined ULTRIX reference pages were necessary for each of the interfaces. The team decided to use the modules in the *Guide to DECproduct User and Programming Interfaces* as the source for these reference pages.

  The team determined that the help for the query language and the system management language would be invoked after users had invoked DECproduct. Thus, reference pages would not be appropriate or required for those help items.

DECproduct included an implementation of an ANSI-standard language. The team realized their information set might have to meet certain criteria for standards submission. The team knew they must determine as early as possible which components would have to meet standards and what those standards were.

The team consulted their product team to obtain all available information about the standard before writing their information set. The information team learned that the information set must identify which parts of the query language were standard and which parts were Digital extensions. The DECproduct information team contacted other information teams who had also dealt with similar standards. Based on the experience of the other teams, the DECproduct team decided to indicate extensions to the standard in the query language reference manual, using color to mark the extensions in the hardcopy manual and using screening to mark extensions in the Bookreader™ version.

4.6.3 Implementing the DECproduct Information Set

The DECproduct team began preparing their information set as described in Table 4–6. They prepared their documentation in a modular format, realizing that some material might be shared between various sources. The team paid particular attention to preparing the reference manuals in modules, knowing that this material would be their source of online help.

4.6.4 Testing and Evaluating the DECproduct Information Set

The information team designed and implemented various usability studies for their information set.

For example, several reviewers expressed concern that the data definition and data manipulation statements were combined into one chapter, alphabetically arranged, in the language reference manual. The reviewers preferred that the statements be presented as two chapters. The first chapter would contain statements used to define data, while the second chapter would contain statements used to manipulate existing data. The reviewers suggested the statements within each of those two chapters could then be arranged alphabetically.

The information team produced copies of the manual with both organizational schemes: one version had the statements in one chapter; the other version divided the statements into two chapters.

Before field test, the team identified a group of Digital employees who were users of an earlier implementation of the same database language. (They thus had a familiarity with the product similar to that of the target audience.) The team devised read and locate tests for both versions of the manual. The purpose of the tests was to determine whether participants could find the statements or whether the information was buried.

The read and locate tests determined that participants took longer to find statements in the two-chapter version of the manual. Several participants stated that they did not make the distinction between data definition and data manipulation statements. Based on these results, the information team decided to produce the statements in one chapter, not two.

See Chapter 13 for further information on usability testing.

4.6.5 Refining the DECproduct Information Set

Following field test, the DECproduct team once again examined its product and audience information. They decided that they needed to reduce the number of hardcopy components. They chose to use a newly-available architectural model, shown in Figure 4–1, to help decide how to present information.

From their research, the team knew that the majority of their users did not have workstations to view Bookreader online books, nor would they have such a capability in the next 2 years. This limited the practicality of providing books only on line. However, the team reduced the number of hardcopy books by providing the reference-oriented language information in the following formats:

- Online help

  Help was available as OpenVMS help for character-cell terminals and DECwindows help for workstations. The help contained the details about the query language statements and system management commands.

- Bookreader books

  The Guide to Database Management and Performance summarized the system management commands and directed users to the online help. Similarly, the Guide to Database Design and Definition summarized the query language commands and directed the users to the detailed online help. Both guides would be available in hard copy and on line.

The group revised its information set design, as shown in Table 4–7.

Table 4–7 Case Study: Modified Information Set Design

Delivery Media	Component	Description
Hardcopy	*Introduction to Application Development*	Conceptual description of using DECproduct, transaction processing software, and other products to design applications.
Hardcopy	*Introduction to DECproduct*	Conceptual description of the product and its parts, how it differs from other similar products.

(continued on next page)

Table 4–7 (Cont.) Case Study: Modified Information Set Design

Delivery Media	Component	Description
Hardcopy, Bookreader	Guide to Database Management and Performance	Task-oriented description of managing the DECproduct system, including: • Configuring and securing the system • Monitoring and tuning the system • Recovering the system Also includes a brief summary of all system management commands, with a reference to the detailed online help.
Online help	System management reference	All system management commands are available in online form.
Hardcopy, Bookreader	Guide to Database Design and Definition	Task-oriented description of designing and creating a DECproduct database, including: • Analyzing data needs • Creating the logical and physical designs • Creating the database • Setting up database security Also includes a summary of the query language statements, arranged functionally, with a reference to the detailed reference information contained in online help.
Hardcopy, Bookreader	Guide to Programming	Task-oriented description of the query language, moving from basic tasks (accessing and storing data) to more complex tasks (creating databases, defining tables, and so on). Also contains a summary of the query language statements, arranged functionally, with a reference to the detailed reference information contained in online help.

(continued on next page)

Table 4–7 (Cont.) Case Study: Modified Information Set Design

Delivery Media	Component	Description
Hardcopy, Bookreader	Guide to Query Language User and Programming Interfaces	Task-oriented description of how to use the three interfaces to the query language: interactive (command line only), module language, and precompiler.
Online help, product interface	DECwindows interactive interface	Task-oriented description of how to use the DECwindows interactive interface. (To consolidate information, the team designated one writer to assist with the user interface design; the writer's goal was to help create a design that would be largely self-explanatory.)
Online help	Query language reference	All query language statements are described in detail in online form.
Hardcopy	Before Installing DECproduct	Task-oriented information the customer needs before installing DECproduct. Needed if there are last-minute changes that affect installation but cannot be included in the Release Notes because of timing. Ships with the software media.
Hardcopy	Installation Guide	Task-oriented description of installing DECproduct, running the installation verification procedure (IVP), and installing and running the sample database. Ships with the software media.
Online book	Release Notes	Reference and task-oriented description of new features, known problems and workarounds, restrictions, errata, information that could not be included in the information set because of timing. Available as an ASCII file on the product kit; customers can print before beginning installation.

4.6.6 Further Refining the DECproduct Information Set

At the end of the project, the information team brainstormed about how they might design their information for future releases. While the information content would be similar to what was available in the previous release, the format and structure would be quite different.

The only books that would remain in hardcopy are the:

- *DECproduct Installation Guide*
- *Introduction to DECproduct*
- *Introduction to Application Development*

Because the Installation Guide is used before the product is installed, users must have a hard copy. The *Introduction to DECproduct* and the *Introduction to Application Development* are both conceptual in nature and would be used as marketing tools as well as part of the product information. As such, they are suitable for hardcopy delivery but would also be available as online books.

The information team decided that all remaining information would be written in modules and would be available on line. The team agreed that technology would have to allow users to print out modules in any combination they chose. If users could not print out modules, this approach would be a burden on the users.

The information team considered the following factors when deciding how users might access online help:

- DECproduct contains two languages: the query language (SQL) and the system management language.
- Each of these languages has two interactive interfaces: DECwindows and command line.

Thus, online help would be accessible from any of these four configurations:

- SQL, command line
- SQL, DECwindows
- System management, command line
- System management, DECwindows

The information team decided to add a new statement to the query and system management languages. Before invoking Help at either language prompt, users could enter a Set Help Reference statement to choose all reference-oriented help. Likewise, users could choose all task-oriented help by entering

Set Help Task_Oriented. The DECwindows interfaces would have the same feature.

Users would see one of three combinations of module displays when they accessed online help:

- If users set their help to Reference, they would see two categories of choices upon invoking help:
  - Getting Started
  - A listing of the DECproduct statements

  The Getting Started module would give an overview of DECproduct and describe how to navigate through the various formats of online information.

  If the users chose a DECproduct statement, they would receive online help including a description of the statement, complete syntax, and a description of the arguments, usage notes, and examples.
- If users set their help to Task_Oriented, they would see two categories of choices upon invoking help:
  - Getting Started
  - A listing of task-oriented DECproduct topics, such as the following:
    * Designing a database
    * Creating a database
    * Inserting data
    * Selecting data
    * Updating data
    * Generating reports
    * Designing for security
    * Maintaining security
    * Managing the database system

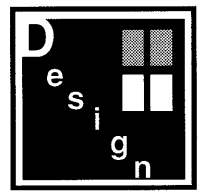
- If users specified neither Set Help Reference nor Set Help Task_Oriented, they would see these choices upon invoking help:
  - Getting Started
  - Reference-oriented topics

    Upon choosing this topic, users would see the listing of DECproduct statements. The introductory material would also mention the Set Help statement so users could choose a default help designation for that session.
  - Task-oriented topics

    Upon choosing this topic, users would see the listing of task-oriented DECproduct topics. The introductory material would also mention the Set Help statement so users could choose a default help designation for that session.

Links would also let users move from one module to related modules. For example, the users who were reading tutorial information on designing a database would easily be able to navigate to the reference material on specific data definition statements.

5
Developing the Information Plan



After you research the audience and product and design the information set, you must write an information plan (also known as a documentation plan). The final **information plan** is an agreement, confirmed in writing, between the funding group and the information group about how the product will be documented. The plan is not just a nicety; rather, it is one of the formal project planning documents that other groups depend on and that you use throughout the information creation process. See Section A.2 for a quality control checklist for information plans.

This chapter describes the process of creating an information plan as well as the parts of the plan.

- Section 5.1 describes the purpose of the information plan.
- Section 5.2 compares *master information plans* to *component information plans*.
- Section 5.3 describes who is responsible for writing the information plan.
- Section 5.4 describes when to write the information plan.
- Section 5.5 discusses scheduling, staffing, and budgeting information that you may need before you write the information plan.
- Section 5.6 gives details about the contents of the information plan.
- Section 5.7 gives details about the contents of the production and packaging plan, which may be part of the information plan or a separate planning document.

Some of the sections in this chapter discuss the information plan in the context of the formal Phase Review Process used by some groups within Digital. See Chapter 2 and *The Digital Guide to Developing Software* for a description of that process and the requirements for each phase. However, even if your product does not follow the same formal process, the information is still valid.

5.1 Purpose of the Information Plan

The information plan:

- Identifies the scope of the information project, including goals, nongoals, the relationship to other projects, and risks and contingencies
- Identifies the proposed contents of the information set
- Identifies the staffing and resources needed to complete the project
- Specifies the plans for production, printing, packaging, and localization, as applicable, as well as the tools to be used
- Provides information to groups with a vested interest in the product, such as manufacturing, internationalization groups, and others

5.2 Master Plans and Component Plans

Because of the size of their projects, some groups create master information plans in addition to plans for each component in the information set. This is common, for example, for major releases of an operating system.

The **master information plan** contains planning material common to the project as a whole, such as overall project goals or a list of staffing for all the components of the project. The **component information plans** then give planning information specific to each component, such as outlines, reviewers for a particular component, and so on. In some cases, the master plan lists the critical project dates (for both the technical and information group) while the component plans list only the information milestones for that component.

Where needed, the sections in this chapter describe differences between master plans and component plans. However, your project needs determine how you distribute the information between a master plan and component plans.

5.3 Who Writes the Information Plan?

Creating the information plan is a group process and requires input from all members of the information team. On large projects, the information team project leader may be responsible for coordinating the plan. The project leader may write the plan with input from the group members or may delegate portions to different group members. If there are master and component plans, the project leader may be responsible for writing the master plan while the writers for each component write the component plans. On single-writer projects, the writer and writing supervisor may be responsible for coordinating the plan, again with help from the other team members.

5.4 When to Write the Information Plan

Your group's practices determine exactly when the information plan must be approved. Section 5.4.1 discusses the requirements of the formal Phase Review Process. Projects that do not follow the Phase Review Process have other requirements; for example, the information plan may need to be approved before any testing by external customers.

Whatever the scheduling requirements, the information plan goes through several drafts and reviews. The earliest version is sometimes no more than a statement of the approach the team intends to take and a list of the information needed from other groups. (The draft plan is often called the **preliminary information plan**.)

- Circulate the draft plan among the members of the information team to ensure that all team members agree in general with its content. Team members may add issues to be raised during the formal review or may be able to supply answers to questions.
- As you gather more information from the project planning documents and other resources, you change and expand the plan.
- Send the revised plan to the members of the product team for at least one formal review. Send mail to the product team members notifying them when you will send the information plan for review and when comments are due. If possible, provide hard copies of the plan for the signoff reviewers. Otherwise, provide the file location of the information plan or, if the file is short, send it through electronic mail.

  If there are many issues, you may need to have several reviews of the plan, particularly by the signoff reviewers. (If possible, mark all changes so that key reviewers can easily see the changed material without rereading the whole plan.)
- When the plan is complete, get the written approval of the plan from your key reviewers. Signoff indicates that the individuals responsible for the project agree that the information strategy is valid and contributes to the quality of the product. The number of reviewers with signoff authority varies with the complexity and type of project. See Section 5.6.1 for the minimum list required.

5.4.1 Information Plans and the Phase Review Process

You are not required to have a preliminary plan for the Phase 0 meeting, which closes the definition stage of development. However, it is better to have a tentative plan and a list of issues at this time. The product team thus has more time to evaluate your strategy, and you have clearly stated what problems the information team foresees so that you can spend more time on resolving the problems.

After the information team reviews the plan, circulate a copy of the plan to the product team before the Phase 0 meeting so that everyone has had the chance to read the plan and prepare questions.

At the Phase 0 meeting, you may be asked to clarify some of the material in the preliminary plan and report on project progress and issues.

During Phase 1, you complete your research for the plan and answer the questions raised for Phase 0. (Often, the team begins working with the prototype product, and the writers begin writing, before the information plan is completed.) Send the plan out for at least one formal review during Phase 1, and allow enough time to incorporate changes before the meeting that closes Phase 1.

The information plan, along with all the other planning documents, must be signed off before the meeting that closes Phase 1.

5.4.2 Changes After Signoff

The final information plan is the information group's commitment to deliver particular pieces of information by certain dates at a certain level of quality. However, the final plan may be modified. Changes in the project may mean changes to your plans. If your plans change significantly (for example, the group loses resources and can no longer provide one of the planned pieces of information), you should submit a summary of the changes to at least the signoff reviewers. Other groups may also need that information if they are depending on the material's being available. For example, the software specialists would need to know that you could no longer deliver the proposed performance tuning information.

If the project schedule changes, the information schedule is also affected. You do not have to send out a new information plan for each change. Instead, when the information review dates change, send a set of the new milestones to the reviewers listed in the information plan so that they can adjust their schedules.

5.5 Before Writing the Plan: Scheduling, Staffing, and Budgeting

The information plan should include the names of the key people who are scheduled to work on the project, the schedule, and, for some groups, the budget for creating and producing the information.

There is an interrelationship among staffing, scheduling, and budgeting. For all three areas, much depends on the people in your organization and the processes you use. Unfortunately, there are no magic formulas.

5.5.1 Scheduling

The beginning and end dates for a project are generally determined by the funder, whether you are working on an engineering project, an internal project for another organization, or a project for an external client. The funder knows when the information about the project will begin to be available to you. The funder also has an end date in mind. That date may be when a product needs to begin shipping in order to meet a certain market need. It may be the date when material must be provided for a certain sales event or the date when a customer must provide the information to another organization.

You need to look at the critical dates in the overall project schedule and use those dates to determine the milestones specific to developing the information.

For example, the critical dates for an engineering project may be the:

- Internal product availability dates

  These milestones may be expressed as the dates when different **base levels** are available, that is, when certain product components meet a predefined level of usability.

- Field test dates

  Field testing is a method of testing to ensure that the product meets its goals and works in the way the project team intends. Products may go through both an internal field test (IFT) by company employees and external field test (EFT) by selected customers. The terms *Alpha test* and *Beta test* are also used to refer to the concept of field testing. In addition, there may be **field test updates**, which provide field test sites with added product features as they are developed. These updates may also be referred to as *FT1*, *FT2*, . . . , *FTn*. See Section 6.9 for more information on field test review.

- Submission to manufacturing

  This date signals when the technical group submits the product to the manufacturing organization for replication and distribution to customers.

- Shipment date

  This date signals the first date on which the company ships the product to customers. Within Digital, this date is called the First Revenue Ship (FRS) date.

These are deadlines that everyone counts on: product managers, marketing, support specialists, and the other members of the program team. Likewise, corporate planning and budgeting depend on the product selling certain amounts by specified times.

Your job is to look at the amount of time and determine how much work can be done within those limits. It may mean cutting back on the number of information components or staggering the amount of material available for any one formal review or field test.

The computer world is neither stable nor perfect. The critical project dates may often change. Sometimes all the critical dates change in sequence, and you can move your dates accordingly. However, there are times when product availability or field test dates change but not the product shipment date. This means rethinking how much information can be delivered in the given time. See Section 5.6.14 for setting expectations around shifting dates.

You need to have a firm sense of how much time is needed in your organization for the different steps in the process. Sometimes it is helpful to work backward from the end date. For example:

- How much time is needed for manufacturing and printing? This time determines the date when the information must be delivered for manufacturing and, therefore, the date when production ends.
- How much time is needed for production? This time determines the date when all information must be submitted to the production group and, therefore, when the information must be written, edited, and approved.
- When is field test and how much time is needed to make copies of the information for field test? These times determine the date when the information must be sent to the copy center. The copy center deadline determines when the information must be ready for copying (that is, the material has been written and edited and meets your group's quality standards for field test.)

Include time in your schedule for the following tasks in addition to the more formal milestones:

- Gathering information as the writer develops the draft
- Writing and revising the drafts

- Circulating the drafts for informal technical and editorial reviews
- Editing the drafts
- Incorporating comments from technical and editorial review
- Drafting the art and meeting with the graphic designer

In addition, allow some time for the following:

- Training
- Illness and vacation
- System downtime
- Engineering redesign and bug fixes

For example, you may add 1 week into the schedule for each 3 months.

See Section 5.6.13 for suggested information plan milestones.

Be realistic about how much work can be done in the time period given your group's processes and the capabilities of your staff. As a team, discuss constraints and changes you must make, either to the information strategy or to the process. The other members of the project team expect you to commit to the schedule you develop in the information plan.

5.5.2 Staffing

As with scheduling, there are no hard and fast rules for determining the number of people needed on a project. You must consider the schedule, the complexity of the project, and the capabilities of your available staff. If your available staff consists of three inexperienced people, you cannot plan as if you had six experienced people. Also consider the following factors:

- How volatile is the product? Is it likely to change many times before release?
- Is the product intended for one or multiple platforms?
- How much of the product is visible to users?
- Does the technical group have a good reputation for delivering material on time and for working with the information team?

Some groups use staffing ratios developed on the basis of past experience. For example, groups may use a ratio of five engineers to one writer, four writers to one editor, nine writers to one designer, and so on. These ratios can help you make initial projections for staffing, but you need to consider the project complexity and the skills of the available individuals before making the final decisions on staffing.

Another method of determining the staffing needs on a project is to determine the estimated page count for the ideal information strategy for the project. (You also need to decide the equivalence of online information to pages.) However, this method does not consider the fact that it takes more time to produce concise, nonredundant information (particularly when a group is revising an information set). Therefore, use the results of this method only as estimates.

Based on the knowledge of your group, you have a sense of how many pages an individual can manage over the life of a project. (For example, you can look at a variety of projects that your group has worked on. Determine the total time of each project through final production. Divide the time by the number of writers on the project. Count the total number of pages for the project and then calculate the number of pages produced on a daily and weekly basis.)

For example, the ideal information strategy for your new project requires 1000 pages of new material, including online information. There are 12 weeks to write the user information. Based on past experience, you know that the individual writers in your group work at an average rate of 15 pages a week over the life of a project.

```
15 pages/week x 12 weeks = 180 pages per person

1000 pages/180 = 5.55 number of writers needed
```

Some of the material can be written relatively easily from a template, so you decide to use five writers for the project.

5.5.3 Budgeting

Not all groups are required to include budgeting information in their plans, although they should understand the costs involved.

The project budget is usually determined by the funder in some way. For example, the funder may determine the total number of people to be funded for the project, thus limiting what you can produce on the product. Or the funder may specify a total amount that can be spent. Given your group's charging rate, you determine the amounts that can be spent for writing, editing, design, and production and develop an information strategy that fits within that budget.

In other cases, you may be able to negotiate the budget with the funder, developing different strategies for different funding levels. For example, you may negotiate the number of components to be delivered, special graphics requirements, or final printing options.

Your project costs are determined by the following metric:

```
Number of hours  x  number of people  x  hourly rate
```

The hourly rate differs according to the group size and the group's overhead expenses, such as charges for office space, telecommunications, or management and administration costs. The hourly rates used in this section are examples only.

For example:

```
Hourly charge rate = $50

3 people x 50 hours each = 150 hours

150 hours X $50 = $7500
```

In other cases, you may have different hourly rates, or you may estimate that individuals will spend different amounts of time on the project. For example:

```
Writing hourly rate =  $50/hour
Editing hourly rate =  $40/hour
Graphics hourly rate = $40/hour

Writing Estimate
   4 writers working full-time (40 hours/week) for 4 weeks

   160 hours x 4 = 640 hours x $50/hour = $32 000.00

Editing Estimate
   1 editor working full-time (40 hours/week) for 3 weeks

   40 x 3 = 120 hours x $40/hour = $4800.00

Graphics Estimate
   1 designer for a total of 40 hours

   40 hours x $40/hour = $1600.00


Total Project Budget

   $32 000.00  Writing
   $ 4 800.00  Editing
   $ 1 600.00  Graphics
   --------------------
   $38 400.00  Total Information Budget
```

See Section 5.6.11 for a suggested format for presenting budget information in the information plan.

5.6 Information Plan Contents

The following sections give details about the components of an information plan. Some groups divide the plan into two parts: Part 1, Information Content and Implementation and Part 2, Information Packaging. If the project is large and complex, as for a major release of an operating system, you may decide to create a separate packaging plan. See Section 5.7 for details on production and packaging plans.

Each information plan should have a table of contents placed after the title page. Some groups also include a copyright page after the title page and before the table of contents. In addition, check with your legal representative about the appropriate use of labels marking proprietary information. For example, you may need to mark the plan with a label such as *For Internal Use Only* or *Company Confidential.*

5.6.1 Title Page

Figure 5–1 shows a sample title page for an information plan. The title page lists the signoff reviewers of the information plan. The list of signoff reviewers varies with the complexity and type of project. Include the following functions:

- Editing
- Funding organization
- Product manager (if there is one)
- Technical experts
- Writing

The authority of individuals to commit to the plan may differ by functional organization. For example, the manager of the funding organization may be the only individual in that group who can sign off on the information plan, while the supervisor of the technical group has the authority to commit to the plan. Check your group's practices before creating your signoff review list.

On some projects, the functions overlap. For example, on some engineering projects, the engineering group is both the funding group and the responsible technical group.

The title page may also list the informational reviewers for the information plan. If you do not list the reviewers on the title page, include them in the Staffing and Reviewing section of the information plan. See Section 5.6.10 for details.

Figure 5–1 Sample Information Plan Title Page

Digital Internal Use Only

Date: May 13, 1991
Discrete Project Number: 098–02168

Final Information Plan
DECproduct Version 1.0

Issued by:

DECproduct Information Project Leader –– Jacqueline Dickinson
Node::JDICKINSON
DTN 555–1212

Approved by:

Writing Manager –– Joanne Cassone

Writing Supervisor –– Ed Perez

Editor –– Michael Moran

Engineering Manager –– Jason Chang

Engineering Supervisor –– Anna Suazo

Engineering Project Leader –– Jon Wilkes–Jones

DECproduct Product Manager –– Frank Callahan

Revision History:

Preliminary draft: April 5, 1991
Revised draft: April 30, 1991

Digital Internal Use Only

5.6.2 Product and Audience Overview

Briefly describe the product, the strategic importance of the product, the audience, and what the product does for the intended audience. The other project planning documents give details about the product and audience; therefore, you need to give only enough information to provide context for the information strategy.

If this is not a Version 1.0 release and substantial changes are involved, you may give a brief historical perspective of the changes, concentrating on the user information rather than the product itself. For example, the section may describe the growth of the product in the international market and the resulting changes necessary in the information.

You may also give a brief audience description in this section and refer the readers to the Information Overview section, where you discuss the audience for each particular component in the information set.

5.6.3 Relationship to Other Products

If your product is going to be used with other products, list the other products here. For software products, be sure to identify the hardware on which the software product will run and the intended platforms.

5.6.4 Comparison with Competition

This section evaluates the information for similar products produced by major competitors. Briefly describe the strengths and, if appropriate, the weaknesses of the competitive information. Concentrate on what is relevant to your information strategy. If a competitor's information does not offer any new insights, then do not mention that competitor; this section is not intended for slighting the competition.

Competitive information is not always available or appropriate, but this section is particularly useful for Version 1.0 products. It may also be useful if:

- The product has new major competitors
- Major competitors have made important changes to their information

If your competitive analysis is extensive, you may include this material in an appendix to the information plan.

5.6.5 Information Overview

The information overview section summarizes the information strategy, how you plan to describe the product in accordance with the product and audience profiles.

5.6.5.1 Information Summary

The first part of the information overview lists each component of the information set:

- The component title
- The delivery media
- The type of source file (indicated by the file suffix)
- The status (new, revision, update, addendum)

For example:

Table 1 describes the hardcopy and online components of the DECproduct Version 1.0 information set.

Table 1: DECproduct Version 1.0 Information Set Summary

Component Title	Media	Source File Type	Status
Introduction to Application Development	Bookreader Hardcopy	.SDML	New
Introduction to DECproduct	Bookreader Hardcopy	.SDML	New
Guide to DB Management and Performance	Bookreader Hardcopy	.SDML	New
Guide to DB Design and Definition	Bookreader Hardcopy	.SDML	New
Guide to Programming	Bookreader Hardcopy	.SDML	New
DECproduct on ULTRIX Installation Guide	CONDIST Hardcopy	.SDML	New
DECproduct on OpenVMS Installation Guide	CONDIST Hardcopy	.SDML	New

Before Installing DECproduct (letter, if needed)	Hardcopy	.SDML	New
DECproduct Release Notes (text file on kit)	Kit	.SDML	New
OpenVMS Help	Kit	.HLP	New
DECwindows Help	Kit	.HLP	New
Reference pages	Kit Hardcopy	*roff	New

If you plan to refer to any external publications, include that information here. For example, some product information sets include textbooks by external authorities.

In addition, if you rely on other information sets and plan to refer to them rather than repeating the information, include the titles, the most recent order numbers, and the groups responsible for the information.

5.6.5.2 Information Set Goals

The Goals section describes the specific objectives for the information set as a whole. For example, you may identify:

- Any specific objectives about the organization, formatting techniques, and usability of the information in a particular market (such as objectives for localization)
- Goals for experimenting with a particular format, organization, or approach

Also include **nongoals**, those items that someone might expect you to cover but that you do not plan to cover, and explain why they are nongoals.

5.6.5.3 Component Description and Outlines

The Description and Outlines section describes each component of the information set. For each component, include the following information:

- Content description, including a brief description of what is new and what is revised for this version.
- Audience identification, if different components are targeted towards different audiences.
- Special characteristics or unusual requirements, if any, such as a particular format or organization. If you already discussed this under the Information Set Goals, do not repeat the information here.

You may include an outline of the major topics for each component in this section. However, your signoff reviewers in particular need to see a detailed outline of each component to judge the organization of the information set. You may include detailed outlines for each component in an appendix instead of presenting them in this section.

5.6.6 Online Information

Information is being placed on line in various forms more frequently than in the past. Your reviewers need to know what type of online information you are planning. For example, the engineering group may need to plan for space on the kit, while the production and internationalization groups need to ensure that the right tools are available.

Table 5–1 describes the information you need to include in your information plan for the various types of online information. See Chapter 11 for information on creating online information.

Table 5–1 Planning for Online Information

Information Type	Include in Information Plan
Online book (Bookreader)	• Whether or not the information will be produced in hard copy as well as on line. • The tools you are using to produce the online information, including the artwork. • The format (doctype, macro package, style) you are using to produce the online information.
Online help	• Whether or not the help text is already available (for example, in a reference manual). If it is not, indicate that new information will be written for the help topics. • A list of the application's objects (for example, icons, menu items, and dialog boxes) for which help will be available. This information may not be available at the preliminary plan stage, but include as much information as possible. • An outline of the task-oriented topics.
Online examples	• A list of the extended programming examples to be put on line. • The estimated block size, if available.

(continued on next page)

Table 5–1 (Cont.) Planning for Online Information

Information Type	Include in Information Plan
Reference pages	• Whether or not the references pages are updates of existing reference pages. • Page-naming conventions. • Nonstandard sections that you will create.

5.6.7 File Naming Conventions

Include the conventions you will use for naming files. The consistent use of clearly defined conventions makes file maintenance easier. Arbitrary file names can cause confusion and extra work.

Developing International User Information recommends using the following convention:

book_subject_element.file_suffix

- *book* is a unique character string that identifies the book name.
- *subject* is a unique character string that identifies the subject of the chapter or part.
- *element* identifies the type of text element, such as *fig* for a figure file or *sect* for a section.
- *file_suffix* (also known as a file type or file extension) identifies the type of file: .HLP, .SDML, .PS and so on.

For example:

```
USER_ENV_CHAP.SDML
USER_SCREENEDIT_TABLE.SDML
REF_EDIT_SECT.SDML
REF_EDIT_CELL_SECT.SDML
REF_PIECHART_FIG.PS
```

Use the following guidelines for naming files:

- Choose file names that are meaningful and unique. This is important for the localization team and for storing and managing your files in a file management library.
- Use the same file-naming conventions across an information set.
- Try to use the same file-naming conventions across related information sets.

- Do not use numbers or letters that indicate location (such as CHAP1, APPB) rather than content. If the information organization changes, you have to rename all the files.
- Do not use order numbers in file names. Because order numbers for one component may vary from country to country, using order numbers in file names could force each country to rename the files.

5.6.8 Usability Studies

If you are going to devise formal usability studies for any component of the information set, include the following in the information plan:

- Constraints

  Describe any limitations that affect the study, such as restrictions on time or expenses, the availability of suitable participants, the availability of the product or a prototype.

- Testing methods

  List the appropriate method for each goal and explain why the method is suitable.

- Testing goals

  List separate goals for each component you intend to test.

See Section 13.2 for more information on planning usability studies.

5.6.9 Internationalization

The Internationalization section of the plan gives an overview of the plans for translating the information or modifying it for a given region. Some of the information is repeated in other locations of the plan, but summarize the information here for easy reference for the localization team.

If there are no plans for localization or translation, state that explicitly. All Digital products, including the user information, should follow the internationalization guidelines in the *Digital Guide to Developing International Software* and *Developing International User Information*. However, if you know that the user information will be localized for the current version, you can then set up certain procedures to ensure that the localization team has the material it needs.

If your project will be localized in some manner, discuss the following topics:

- Which components will be localized
- Source file naming conventions
- Tools

- Templates

For example:

We will design and write the information set for an international audience, complying with the various internationalization and translation guidelines.

The *Introduction to DECproduct* will be adapted for the GIA market.

The source files will use the following naming convention:

book_subject_element.file_suffix

See Section *n.n* for details.

We will use templates to write the following components:

o The *DECproduct on ULTRIX Installation Guide* will use the ULTRIX IG template, available in:

NODE::DOC$TEMPL:ULTRIX_IG_TEMPL.SDML

o The *DECproduct on OpenVMS Installation Guide* will use the OpenVMS IG template, available in:

NODE::DOC$TEMPL:OPENVMS_IG_TEMPL.SDML

We will use VAX DOCUMENT™ Version 2.0 to produce the user information.

The information group will use CMS as the file management tool.

See Section *n.n* for more information on tools.

In addition, identify the member of the information team responsible for coordinating translation work and the person responsible for working with translators. Within Digital, these are known as the translation coordinator and ISE User Information Engineer. Summarize the responsibilities of each person. For example:

Translation Coordinator

The translation coordinator for DECproduct Version 1.0 is Susan Schlecter.

The translation coordinator has the following duties:

o Facilitating communication between the information team and the ISE UI engineer

o Negotiating and coordinating the schedule for delivering source files and artwork

- Distributing review drafts to ISE and collecting comments
- Reviewing the ISE User Information Plan
- Reviewing the information set for conformance to internationalization guidelines

If necessary, the translation coordinator will provide the UI engineer with the following information:

- Notice of changes to this information plan that occur after signoff
- Hard copy of the information marked for color and showing the placement of artwork
- Information on the design of the information set, including templates, modularity, core information, and so on
- Comments on the post-project report written by the UI engineer

ISE User Information Engineer

The ISE UI Engineer for DECproduct Version 1.0 is George Leclerc.

The UI Engineer has the following duties:

- Sending online copies of the ISE User Information Plan to the translation coordinator for review
- Communicating with the information team through the translation coordinator
- Confirming receipt of hard copies of drafts, art, or other materials
- Providing the translation coordinator with a copy of any post-project report on the localization project

5.6.10 Staffing and Reviewing

Most information plans combine the list of information team members with the list of reviewers for the information components. (The component reviewers may be different from the information plan reviewers, and different components may have different reviewers, depending on the reviewers' areas of expertise.) Indicate which reviewers have signoff responsibility for the components.

The technical reviewers are the technical experts responsible for developing the product. On engineering projects, this includes the engineering project leader and engineers. See Section 6.6.1 for more information on technical reviewers.

The informational reviewers include members of other project teams related to your project. They also include anyone who is interested in knowing about your product. If you are working on product information, be sure to include the training developer for the product. Likewise, training plans should include

product information team members as reviewers. See Section 6.6.2 and Section 6.6.3 for more information on editorial and user reviewers.

If you do not list the information plan reviewers on the title page of the information plan, list them in this section.

In the staffing and review list, include each person's function, name, and electronic mail address.

Figure 5–2 shows the staffing and reviewing section of a sample information plan.

Figure 5–2 Sample Information Plan Staffing and Reviewing Section

Table 2 describes the staffing and reviewing requirements for all components of the information set. Asterisks mark the individuals with signoff responsibility.

Table 2: Staffing and Reviewing Requirements

Information Group Reviewers:

Writer	*	Jacqueline Dickinson	NODE::JDICKINSON
Writer	*	Mark Thomas	NODE::MTHOMAS
Editor	*	Michael Moran	NODE::MMORAN
Writing Supervisor	*	Ed Perez	NODE::EPEREZ
Writing Manager	*	Joanne Cassone	NODE::JCASSONE
Editing Supervisor		Kent Douglas	NODE::KDOUGLAS
Editing Manager		Pat Grabowski	NODE::PGRABOWSKI
Translation Coordinator		Susan Schlecter	NODE::SSCHLECTER

Technical Reviewers:

Engineering Supervisor	*	Anna Suazo	ANODE::SUAZO
Engineering Project Leader	*	Jon Wilkes–Jones	ANODE::WJONES
Engineer	*	Wendy Barton	ANODE::BARTON
Engineer	*	Sonia Rojas	ANODE::ROJAS

Informational Reviewers:

Engineering Manager	*	Jason Chang	ANODE::CHANG
Product Manager	*	Frank Callahan	BNODE::FRANKC
DECinfo Information Group		Cindy Arakelian	GNODE::ARAKELIAN
ISE UI Engineer		George Leclerc	CNODE::LECLERC
Training Development		Rick McGrath	DNODE::MCGRATH
CSSE		Sheela Agarwal	ENODE::AGARWAL
SQM		Karl Szabo	ANODE::SZABO
Marketing		Elaine Gleason	FNODE::ELAINEG

Information Plan Review Only:

Design/Production Manager	Maggie Kotches	HNODE::KOTCHES
Design Supervisor	Phil Stylianos	HNODE::PHIL_S
Production Supervisor	Pauline Lessard	HNODE::LESSARD
Manufacturing Planner	Bethany Taylor	JNODE::BTAYLOR

5.6.11 Budget

If your group includes budgeting information in the information plan, include that information here. Explain which tasks are included in the costs as well as the costs themselves. For example:

10.0 Project Budget
This section describes the projected budget for creating and producing the information for DECproduct 1.0.

10.1 Included Costs

All writing costs include research, writing, and information preparation and coordination.

All editing costs include substantive editing, production editing, and online review.

All production costs include formatting and design, graphics consulting and preparation, and archiving.

Any travel costs outside of normal interplant travel are not part of these writing costs and are assumed by the funder.

10.2 Estimated Costs

The following costs are based on the estimated page counts and estimated schedule and are subject to change if the project plans change:

Task Group	*Cost*
Writing	$37 000.00
Editing	$10 000.00
Production	$ 5 000.00
Total cost	$52 000.00

These costs do not include the cost of printing, which the funder agrees to handle separately.

5.6.12 Tools and Equipment Requirements

Production and localization groups need to know what tools you plan to use in developing your information set. List every tool that the team members will need and what it will be used for, including tools for file maintenance (such as a file management library). Using a file management library not only gives you a daily history of changes but also lets you rebuild information for different product versions or different time periods. If you plan on using any unsupported tools, explicitly state that in this section and explain why.

Developing International User Information discusses issues surrounding tools and internationalization.

In addition, the project needs or the tools you must use may require special equipment beyond your terminal. For example, the writer may need an account on the system being documented to test examples, or the graphic designer may need to use a special type of workstation to use the graphics editor needed for the project.

If you need any privileges, printers, accounts, systems, disks, or other hardware or software, list them and briefly describe why they are needed.

The engineering project leader, your supervisor, and your system manager can help you determine what you need. You may also include requirements for special training in this section or create a separate section. For example, the writer may need to take a certain programming course, or the graphic designer may need time for learning a new tool.

5.6.13 Milestones

The milestones section of the information plan lists critical project dates and dates specific to developing the user information. The information dates are derived from the critical project dates, which are usually nonnegotiable.

Some groups list the critical project milestones and major information milestones in the master information plan and then list milestones specific to each component in the component information plans. For example, the master information plan might list:

- Dates when different product base levels will be available
- Dates of project readiness reviews, or, for projects following the Phase Review Process, phase closure dates
- Date when code is frozen, that is, when development stops on all portions of the product that will be visible to the user
- Date when the master information plan will be approved
- Dates when all information will be ready for field test
- Date when the last information component is ready for manufacturing
- Product shipment date

Each component information plan then concentrates on the milestones specific to that component:

- Component information plan signoff
- Begin and end dates for each formal review

- Production date
- Manufacturing delivery date

If the information is being localized, the component information plans also include milestones for the following tasks:

- The date when the translation coordinator sends the information plan to the internationalization group
- The date when the translation coordinator sends the art list to the internationalization group
- The date when the translation coordinator transfers the source files to the internationalization group (usually several weeks before the components are delivered for manufacturing)

If you have both hardcopy and online information (for example, books on CD–ROM), your schedule may include additional milestones for tasks such as the following:

- Testing and reviewing online material. You may list separate milestones for different stages of testing, such as testing by the writer, review by the technical and editorial reviewers, and review by the production group.
- Confirming delivery on a particular media. For example, your group may need deadlines for declaring that a particular information set will or will not be released on a CD–ROM.
- Submitting files for online media. Your group may have milestones for when materials must be submitted for release on a particular media, such as a CD–ROM. For example, sometimes installation guides must be submitted at one time and other online information at another time.

Table 5–2 lists the information milestones specific to the user information and specific to Digital processes. Key tasks are highlighted. The milestones are in approximate chronological order; the table separates the information by the phases in the formal Phase Review Process, but the tasks and the order are also valid for projects that do not follow that process.

Use the table as a guide to develop milestones appropriate for your project. Depending on the nature of your project, you may not need all the milestones listed in Table 5–2. For example, the table lists quality assurance milestones for Digital software groups to submit files to the Software Quality group; your group may not need such milestones. You may also need to add milestones. For example, your group may separate the approval of outlines from the approval of the information plan. If so, then add a separate milestone for the approval of outlines.

In listing the milestones in your information plan, use actual dates, not *TBS* or *when available*, particularly in the final plan. The people reviewing the information plan need real information, even if it is your best guess given the information you have. You can indicate that some dates are unstable. For example, put *(Estimated)* or an asterisk (*) next to dates likely to change. You can also emphasize that your dates depend on the project dates and that changes in the project dates will affect the information schedule.

Table 5–2 Milestones in the Information Plan

Process Phase	Milestone	Comments
Define (Phase 0)	Preliminary information plan available	The preliminary plan is a draft; some sections may be blank, and others may be subject to further research.
Design (Phase 1)	**Information plan approved (signoff)**	Approval of the plan is a requirement for Phase 1 closure in the Phase Review Process.
Develop (Phase 2)	Begin writing first drafts	This includes both hardcopy and online components.
	Begin developing artwork	Group practice determines the exact milestones for when rough art is submitted to the graphic designers and when finished art must be completed. For example, your group may require that first drafts have rough art, field test drafts have more polished art, and signoff drafts have completed art.

(continued on next page)

Table 5–2 (Cont.) Milestones in the Information Plan

Process Phase	Milestone	Comments
	Begin first draft review (hardcopy and online)	At the minimum, distribute the first draft to the editorial and technical reviewers. Other reviewers may also be interested in the review. It is usually a good idea to stagger the dates for the review of multiple components within a set. Therefore, your milestones table may list a begin and end review date for each component in the set. In general, schedule 2 weeks for the first review because the reviewers must closely scrutinize the organization and content at this stage. (If the component is large, you may need to allow longer than 2 weeks.) See Chapter 6 for more information on formal reviews.
	First draft review comments due	
	Begin first draft review of installation guide (IG)	Writing the installation guide is frequently one of the last major tasks before the field test deadline because critical information is not available any sooner. Review the draft 2 weeks before the field test deadline. Note the missing information, and fill it in when it becomes available.
	First draft IG comments due	

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Table 5–2 (Cont.) Milestones in the Information Plan

Process Phase	Milestone	Comments
	Submit field test drafts to copy center	Before this date, work with the field test administrator to find out how many copies will be needed for field test. On this date, submit the hardcopy information to the copy center. Depending on your site, the copy center may need at least a month's notice of this date. The installation guide is often sent to the copy center after the other hardcopy components because the material is not ready until a few days before the field test release date. Some teams choose to make their own copies of the installation guide.
	Submit online information for field test	Submit online modules and reference pages to the engineering project leader so that the files can be built into the kit.
Deliver (Phase 3)	**Submit information to field test administrator**	On this date, submit all hardcopy information to the field test administrator. The administrator is responsible for distributing the copies to the field test sites.
	Give copies of information to the Software Quality group	This is a requirement for software information. When field test begins, a copy of the information must go to the quality group. (Often the engineering project leader is responsible for the submission.) Include the installation guide, online help (optional), and any preinstallation letters. This submission lets the quality group give early feedback on this information and can make the final signoff process smoother.

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Table 5–2 (Cont.) Milestones in the Information Plan

Process Phase	Milestone	Comments
	Begin second draft review (hardcopy and online)	Second draft review often coincides with the field test review. As for the first draft review, circulate material to at least your technical and editorial reviewers. Informational reviewers may also want to see the components at this stage. As for the first draft review, you may stagger the dates for the review of the multiple components within a set. In general, schedule 2 weeks for the second draft review. See Chapter 6 for more information on formal reviews.
	Second draft review comments due	
	Begin field test review of index	Some groups schedule a separate editing pass of each component's index. This allows the editor to concentrate more fully on increasing the usability of the index. Schedule at least a week for each component in the set.
	End field test review of index	
	Submit field test update drafts to copy center	If you are providing hardcopy drafts of any components for the field test update, submit those components for copying on this date. Depending on when the installation information is updated, you may need to have a separate milestone for submitting the installation guide to the copy center.
	Submit online information for field test update	Submit online help files to the engineering project leader so that the files can be built into the kit.

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Table 5–2 (Cont.) Milestones in the Information Plan

Process Phase	Milestone	Comments
	Submit field test updates to field test administrator	On this date, submit all hardcopy information to the field test administrator. The administrator is responsible for distributing the copies to the field test sites. If you also have an internal formal review scheduled at the same time, you are responsible for distributing copies to those reviewers.
	Submit final artwork to production group	All art must have been submitted to the graphic designer by this date. The graphic designer on the team can help determine this date, which varies according to group practice. It is usually some weeks in advance of the production start date so that the artwork is completed before the information begins final production.
	Information freeze	This milestone applies particularly to the hardcopy and Bookreader components of the information set. After this date, changes are allowed in the information sources only after negotiation. In most cases, the changes are included in the release notes. For large information sets, you may need to freeze some components earlier than others. The information freeze date is usually the same day as or shortly after the product code freeze.
	Begin signoff review	All hardcopy components and the online help must be approved by the signoff reviewers. Deliver hard copies of each component and of the online help to the signoff reviewers. Allow at least 1 week for the final signoff review.
	Signoff review comments due	
	Signoff	Signoff signifies approval of the user information.

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Table 5–2 (Cont.) Milestones in the Information Plan

Process Phase	Milestone	Comments
	Online help freeze	This date is determined by the engineering schedule for building software kits. The online help files must be ready before the kit building begins. Negotiate the date with the engineering project leader.
	Submit print specifications to production group	The production group must create print specifications several weeks before the hardcopy components are delivered for manufacturing. This allows the manufacturing group enough time to find the proper film supplier for the job. See your manufacturing representative for details on submission deadlines.
	Begin final production	This is the deadline for submitting all hardcopy components for final production. The date depends on your group's processes and the size and complexity of the job. The members of the information team negotiate the production date. Large projects often have a staggered schedule for final production.
	Product assurance kits to the Software Quality group	This is a requirement for software information. The engineering project leader submits this kit to the quality group. Provide a hard copy of the installation guide and any letters with preinstallation information. The quality group reviews the information to ensure that their field test comments were addressed.
Deliver (Phase 4)	**Delivery to manufacturing**	This date marks the end of final production. For the information group, this is the date when the hardcopy components are delivered to the film supplier for mastering.
	Product shipment date	

5.6.14 Dependencies and Risks

The Dependencies and Risks section lists the events that might affect the information project. Identify any known risks to the quality, schedule, or production of the information. For example, you might be relying on the availability of new techniques, equipment, or tools.

If your information uses screen captures, mention the need for a stable user interface. For example, if the engineering team changes a menu item as you are doing your final screen captures or the client updates a dynamic database, your schedule and the accuracy of the information may be jeopardized.

This section may contain the following topics:

- Any product-specific dependencies.
- Dependencies on the availability or support of tools and equipment.
- Dependencies on certain types of training.
- Changes to the project planning documents that affect the focus of the project. Such changes can affect the commitments stated in the information plan, such as a major change in audience definition.
- Changes to the milestone dates for software and hardware design, development, testing, and release. Changes in specifications and delays in development milestones mean a corresponding change in the information schedule.
- Changes to the requirements from product management or manufacturing. Packaging plans are based on these agreements and may need to change.
- Changes to the product after the agreed-on feature freeze date.
- Changes to the project staffing.
- Insufficient access to and time with technical experts.
- Lack of promptness and quality of reviews of all information. (See Chapter 6 for more information on handling draft reviews.)
- Acknowledgment of unusual or difficult project circumstances. For example, an information team may be located in widely separated geographic locations, or the team may belong to separate funding organizations.

For each risk, list a corresponding contingency plan. Thinking about what you will do before something goes wrong helps the team more easily change course if the problem does occur. It is also a means of making the rest of the project team aware that their actions can complicate or delay the information and thus the project.

Sometimes you have no choice but to slip the schedule, but this has serious ramifications for the project. The team needs to examine alternatives. For example, if the project is understaffed, can certain books be delayed until the next product release? Can you cut one of the review cycles?

Be aware of the impact of schedule changes on all the functions. For example, if a writing milestone is missed for whatever reason, there may be an effect on the editing and production groups as well as on manufacturing. Because they are working with multiple projects, these groups may not be able to change their schedules. The contingencies for handling these types of schedule problems need to be stated explicitly in the information plan.

5.6.15 Standards Compliance and Waivers

List all standards with which the information must comply, including both company standards and external standards (such as American National Standards Institute [ANSI] or International Organization for Standardization [ISO] standards). Following ISO standards is extremely important to ensure product acceptance worldwide. Compliance with ISO standards is becoming a business and technical requirement, particularly in Europe. Your company's standards may increasingly comply with ISO standards.

See Section 3.4 and *The Digital Style Guide* for more information on complying with standards.

Also indicate whether you need a waiver from a particular standard. For example, there are Digital packaging standards that information sets must conform to. In some cases, product needs require a waiver. If external customer needs require you to get a waiver, ask the customer to state the requirement in writing.

Before applying for a waiver, check with the internationalization team to make sure that the planned action is applicable and usable worldwide.

5.6.16 Project Maintenance

Include a statement about how the information team will handle reader comment cards, information-related product problem reports, and other feedback from customers after the product release. See Chapter 8 for more information on project closure.

5.7 Production and Packaging Plans

Include details about the information production and packaging. This material can be either part of the overall information plan or, for large, complex projects, a separate plan. If it is a separate plan, send the production and packaging plan to the same set of reviewers as the information plan.

You will not have all the production and packaging information you need at the preliminary information plan stage and may not have all the information for the final information plan. Supply as much information as you can for the final information plan. When all the information is complete, update the plan and send it to the signoff reviewers, production representatives, and manufacturing representative.

5.7.1 Component Production and Packaging Information

Table 5–3 explains the type of packaging and production information to include for each component of the set.

Table 5–3 Component Production and Packaging Requirements

Category	Description
Distribution source	The group that will manufacture and distribute the information set.
Manufacturing number (if appropriate)	Your manufacturing group may assign a number to a project for tracking it through the manufacturing process, from forecasting through inventory. If there are separate numbers for different types of kits, be sure to identify all the relevant numbers.
Order number	Identify the order number or part number assigned to the component.
Submission method	The way the information will be submitted for manufacturing: electronic documentation mastering? hardcopy reproduction package for film mastering? electronic submission for low-volume printing?
Format	The name of the format (doctype, style) used to process the component, such as the SOFTWARE.REF and HELP doctypes or the Manual and Technical Journal styles.

(continued on next page)

Table 5–3 (Cont.) Component Production and Packaging Requirements

Category	Description
Tools	If the production and packaging plan is separate from the rest of the information plan, include a discussion of the tools to be used for creating all text and graphics as well as any file management tools.
Approximate block count	The block count helps the production and localization groups plan for more efficient processing.
Binding method	The way the component will be bound, such as perfect-binding or saddle-stitching or in a ring binder.
Spines	Indicate the number of spines needed for perfect-bound books and the details for what is printed on the spines. Indicate the number of spine inserts for ring binders and the details of what is printed on the spine inserts. See Section 5.7.2 for examples of specifying spines.
Tabbed dividers	Indicate whether or not the component will use any tabbed dividers. If it will, give details on how many and of what type.
Covers	Indicate whether the front cover of a hardcopy component is flush or tabbed. If the front cover will use a graphic, describe what is needed.
Trim size	Indicate the trim size of the component, such as 7 inches by 9 inches or A4.
Color	Indicate whether or not multiple colors will be used. If they will, give details about which colors and how they will be used.
Page count	Indicate the estimated page count.
Graphics details	In as much detail as possible, indicate the number of new, revised, and existing art pieces needed. Estimate the number of screen captures that will be used. Will any of the art need to be converted from hardcopy to electronic form? Are there complex tables or examples that need production support?

If your production and packaging plan is separate from the information plan, also include the following information in the production and packaging plan:

- The name of the manufacturing group contact
- The delivery media for each component (hard copy? online book? online ASCII files?)
- The tools to be used for creating and managing all components

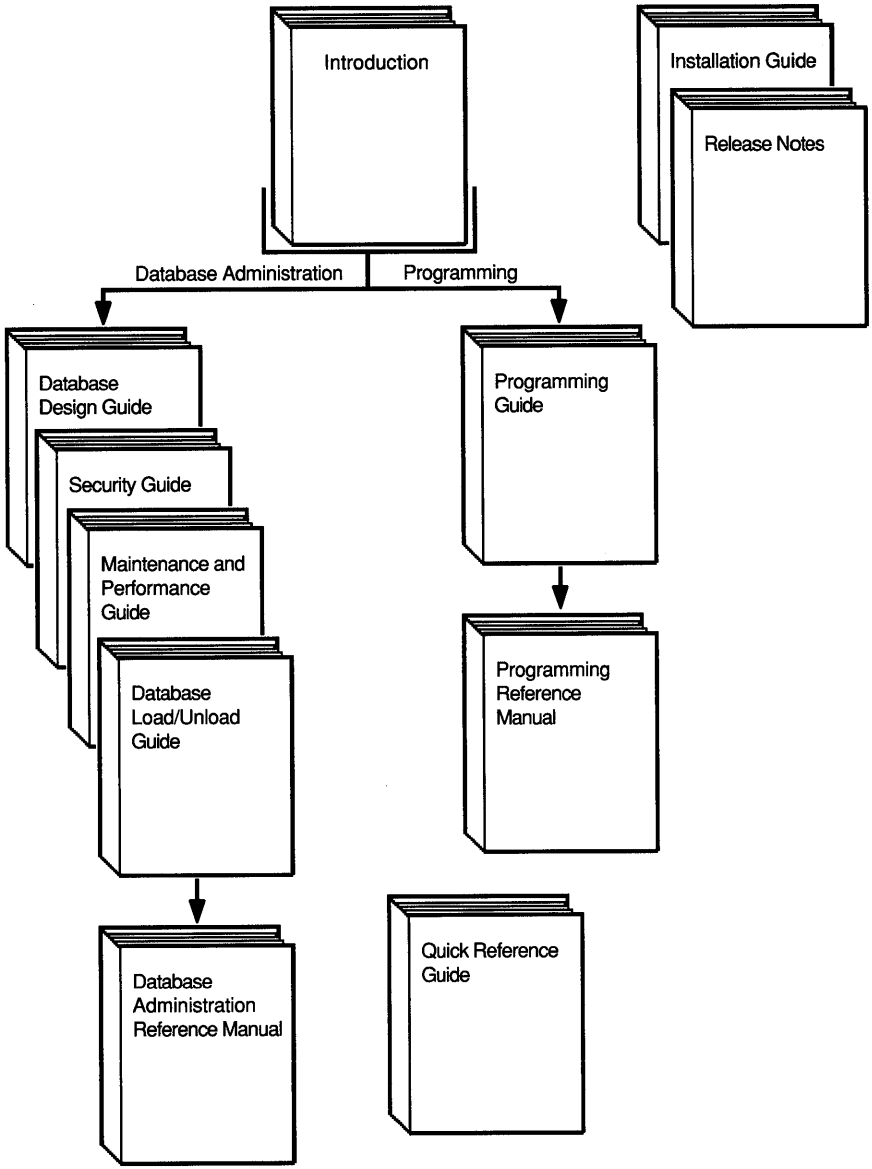
You may also need to give more information based on how your group works. For example, additional project numbers may be needed.

5.7.2 Component Kitting Information

Hardcopy components are sometimes grouped into logical and physical kits:

- A product may be divided into logical units targeted towards different audiences. For example, the user information for a database management system may be sold in three different kits. The full kit contains all the user information, but the database administration and programming kits contain different components, as shown in Figure 5–3.
- Ring binders can usually accommodate more than one book. The information team can decide to place multiple books in a binder, thus forming a physical link between the books. (The books usually share a logical connection as well.) Groups of binders may also form a logical kit.

Figure 5–3 Logical Kitting Sample



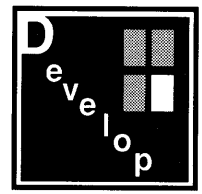
If your information set is divided either logically or physically, you need to outline the kitting structure. Include a table or drawing in the plan that shows each kit.

For example:

```
This product will be sold in two kits, a user kit and a system manager
kit.
The User kit (Kit number nnnnn-GZ) has two binders and two spine
inserts. The installation guide is packaged with the software kit.

Binder 1: 2-inch (Order number nn-nnnnn-nn)

Spine 1:  DECproduct
          ------------------
          User Information

          Getting Started

          User's Guide

Binder 2: 1½-inch (Order number nn-nnnnn-nn)

Spine 2:  DECproduct
          ------------------
          User Information

          Reference Manual

The System Manager kit (Kit number nnnnn-GZ) has one binder
and one spine insert. The installation guide is packaged with the
software kit.

Binder 1: 2-inch (Order number nn-nnnnn-nn)

Spine 1:  DECproduct
          ------------------
          System Manager

          System Tuning

          Troubleshooting
```

6

Draft and Review Process



While the technical experts design, build, test, and revise the product, the information team goes through a similar iterative process:

- The writers develop their drafts, send the drafts through informal and formal reviews, and revise the material based on the review comments.
- The editor works with the writers to develop the drafts and reviews successive changes.
- The graphic designer develops the art, sends it to review by the writers and editor, and revises the art based on the reviews.

Often, the process of creation-review-revision starts before the project plans are approved. Any changes in the plans or schedules may cause further review and revision.

Reviews are the major quality assurance method for information, the means by which the project team members and users comment on the accuracy of the information. Reviews also ensure that the information's organization, design techniques, and explanations make the information, and thus the product, usable.

There are two types of reviews:

- Informal reviews involve only a selected set of reviewers and usually focus on small sections. Informal reviews may be scheduled in advance with the selected set of reviewers.
- Formal reviews are scheduled well in advance and invite all interested reviewers to comment on all aspects of the information. Field test reviews are a special type of formal review in which the product's customers test both the product and the user information.

This chapter discusses:

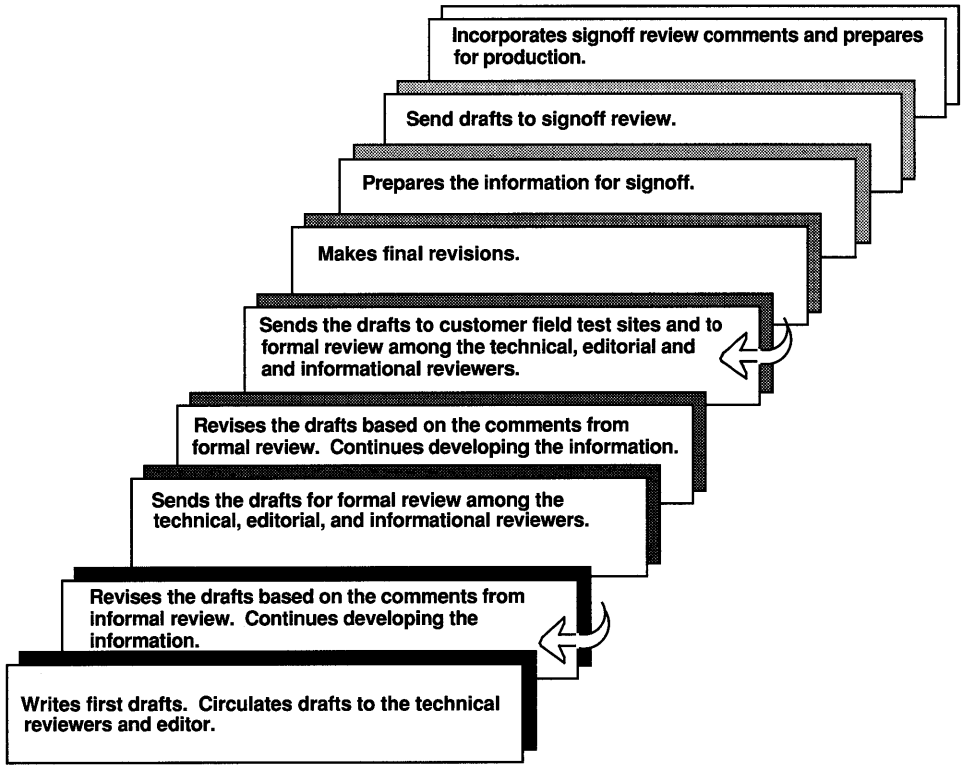
- Steps in the draft and review process (Section 6.1)

- Hints for getting started on a first draft (Section 6.2)
- Types of reviews: informal (Section 6.3) and formal (Section 6.4)
- Preparing for formal reviews (Section 6.5)
- What reviewers look for (Section 6.6)
- Additional reviewing methods:
  - Peer reviews (Section 6.7.1)
  - Review meetings (Section 6.7.2)
  - Formal document inspections (Section 6.7.3)
- Incorporating comments from formal reviews (Section 6.8)
- Special requirements for field test review (Section 6.9) and online review (Section 6.10)
- Formal signoff (Section 6.11)

6.1 Steps in the Draft and Review Process

The writer follows a set of steps in creating and revising the drafts, as shown in Figure 6–1.

Figure 6–1 Steps in the Draft and Review Process



6.2 Facing the Blank Screen

After the initial planning and research, the time finally comes for the writer to face the blank screen and begin writing. How does the writer begin? The following are suggestions for getting started and continuing the writing process:

- As a beginning premise, the writers can work from the outline in the information plan, bringing to bear all the knowledge gained from the research into the product and audience. As the draft develops, the writers may make changes in the organization of the material. For example, one topic may need to be linked to several topics instead of just one, and another topic may need to be divided into subtopics. Thus, the writers use the outline as a starting point but should not be be afraid to make changes to it.

- Remember that a first draft is a draft, not the finished product. The writers work with the material they have, concentrating on clarifying the purpose and audience and refining the organization and content as they develop the material. During the draft process, the writers identify where they need more information, examples, and graphics; it is acceptable to leave blank spaces or notes on material to be supplied later. Drafts often contain notes to reviewers asking if a paragraph correctly explains a process or concept. Drafts also contain questions from the writer about perceived inconsistencies in the product as well as suggestions for technical changes.

  The nature of the material may determine the completeness of a particular draft. For example, the first draft of reference information may be more detailed than the draft of task-oriented material because of the level of detail available in the project planning documents.

- The order in which the writers create sections depends on the order in which the technical experts develop the product. By following the flow of the product development, the writers can more likely test the portions of the product they are writing about.

- Flexibility is important. As the process continues, the writers probably do not work in a linear progression through the sections of the outline. The writers may move between modules and components depending on the material available at any one time. In addition, a writer's chief resource, the technical expert responsible for that section of the product, may not be available at the exact time the writer needs the information. The writer then needs to move on to another section and return to the material when the technical expert is available.

- What happens if the writer develops a creative block? The writer may:
  - Put the material aside
  - Take a walk
  - Work on another component or section
  - Go back to the project planning documents for more ideas
  - Use the product prototype
  - Think about the usability studies for the user information
  - Talk with internal users

  In addition, writers should remember that they do not work in isolation. A writer can discuss the problem section with the other writers on the project, the editor, and the technical experts.

Then the writer can return to the section with a fresh perspective.

6.3 Informal Reviews

Informal reviews generally involve no more than several modules or a chapter. For example, an informal review may mean working with the technical expert to clarify the accuracy of a section. Informal reviews occur throughout the product development cycle; they are an in-process check that the writer is developing the material correctly and that the information is accurate, appropriate, and clear.

While there are many methods of conducting informal reviews, writers may want to set expectations about the informal reviews for a particular project or component. For example, a writer may let the informal reviewers know that they will receive six modules every month.

During informal reviews, editors work with the writers on the following items:

- Organization

  In the same way that writers may change the outline as they write, editors look at the structure of the information as the writers develop the text. What made sense in an outline may look different as the information becomes more detailed and as the editor sees the different components in the set. The editor examines the order of information and the relationship of the parts to the whole and suggests ways to reduce redundancy and move material from one section to another or one component to another.

- Clarity

  The editor helps the writers ensure that the ideas are presented clearly, that users can use the information to accomplish their tasks. The editor also makes suggestions about the terminology and links between information.

- Method of presentation

  During informal reviews, the editor also makes recommendations about how information is presented: How much detail should be included given the team's assumptions about the user? What material is more appropriately presented as figures, tables, or examples? What material is more appropriately presented on line?

6.4 Formal Reviews

Formal reviews give the opportunity to comment on the user information to everyone who has a technical interest in the project or who can provide insights about how the customers may use the information. Formal reviews have a wider scope than informal reviews:

- The number of reviewers is larger for formal reviews.
- The material being reviewed is generally more extensive. For example, during informal review, the writer may circulate only certain modules as they are developed. At formal review, all completed modules are sent for review.

The number of formal reviews and their timing vary according to project circumstances. Ideally, schedule three formal reviews for each component of the information set:

- First draft review
- Second draft review (which may coincide with the field test review discussed in Section 6.9)
- Signoff review

It is also a good idea to schedule a separate editorial review of the index for each component. The index review allows the editor to focus on the index itself, making sure that entries are complete and accurate.

See Section 5.6.13 for information on the milestones for formal reviews.

6.5 Preparing for Formal Review

Formal reviews are not spontaneous events. The information team must:

1. Update the list of reviewers
2. Write the review cover letter
3. Prepare the review drafts
4. Have copies made of each review draft (the time needed depends on your site's copying practices)
5. Distribute the review package

The complexity of the project usually determines who is responsible for each of these tasks.

6.5.1 Checking List of Reviewers

Depending on the amount of time between the approval of the information plan and the first draft review, the list of reviewers in the plan may need to be updated. Different people may now be responsible for certain functions, and additional reviewers may want to see the drafts. (The regular project team meetings and your ongoing project research are the best sources of changes.) Check that you have the correct information about the reviewers' office locations and electronic mail addresses as well as the functions they represent.

6.5.2 Writing the Review Cover Letter

The review cover letter lets reviewers know what you expect of them during the draft review. Include the following information in the cover letter:

- The title of the component.
- The date when review comments are due.
- What type of review you are expecting, what the reviewers should be looking for.
- Where to return review comments.
- The online location of the review material (that is, the file specification or path name of the material to be reviewed). This is particularly important for reviewers at different sites.

Example 6–1 shows a sample review cover letter.

You may also include information on the status of the draft or project. For example, the cover letter may state that Chapter *n* is sketchy, awaiting the information from the next base level, or the letter may raise questions about whether the information is correct for the stated audience.

You may write separate cover letters for different types of reviewers. Call their attention to sections important to them.

It is also helpful to include the distribution list for the review with the cover letter. Reviewers may have ideas about who should be looking at the draft, and having the distribution list lets them check that all necessary names are included.

Consider sending the review cover letter to the reviewers before the review period begins. This notice reminds them of their obligations and sets expectations in advance.

Example 6–1 Sample Review Cover Letter

To: Reviewers of DECproduct SQL reference help topics
From: Jacqueline Dickinson
Date: July 15, 1991

Subject: Upcoming Review of DECproduct SQL reference help topics

The first draft review of the DECproduct SQL reference help topics begins on:

MONDAY, JULY 22, 1991

Review comments are due back to me on:

MONDAY, AUGUST 5, 1991

Please deliver your comments to my office (RB33-26), send them to me at mailstop RB33-20, or send electronic comments to me at NODE::JDICKINSON.

Technical reviewers: Please review the text, syntax, and examples for accuracy. Is the terminology correct? Is the information technically complete?

Editorial reviewers: Please review the material for organization, completeness, usability, accessibility, consistency, style, and method of presentation. Are the topics broken out sufficiently?

User reviewers: Is the material appropriate for the intended audience? Are the examples and explanations clear?

Please note the following:

- The information on data types is a placeholder; I'm waiting for more information.
- Does the concept of "streams" apply?
- Is there too much information on correlated references?

On July 22, I will distribute copies of the draft material to the signoff reviewers (marked by a * on the attached distribution list). Other reviewers can copy the material from:

NODE::DiskN:[DECPRODUCT.PUBLIC]SQL_REF.TXT or .PS

(continued on next page)

Example 6–1 (Cont.) Sample Review Cover Letter

```
Distribution:

Technical Reviewers:

Ruth Linden
Sonia Rojas*
Jon Wilkes-Jones*
    .
    .
    .
```

6.5.3 Preparing the Review Draft

The draft you circulate for formal review should be as complete as possible. The easier it is for reviewers to read the draft, the more complete and helpful their comments will be.

You can take several steps to make the review go more smoothly:

- If the tools you use include spelling and style checking components, use them before the review so that superficial errors do not detract from the substance of the information. Technical reviewers can then concentrate on the accuracy of the material, and editorial reviewers can focus on the organization, style, and clarity of the material.
- If possible, for any draft after the first draft, mark changes since the last draft so that reviewers can easily see the changes. (Many authoring tools have the capability to use change bars or some other character to mark sections of text that have changed.) However, if there are radical differences between the first and second drafts, marking changes is impractical. Note the nature of the changes in the review cover letter.
- Make sure that primary reviewers in particular have copies of their comments from the previous review. The previous review copies give context for the changes, letting the reviewers check the new material against their previous concerns.
- Be considerate of the reviewers' schedules. Try not to schedule formal reviews when the technical experts are facing deadlines or when key reviewers will be away. Notify your primary reviewers ahead of time of formal reviews. If a review must fall at a busy time, allow a longer review cycle or distribute sections of the draft at different times. You may also consider having a longer review cycle for certain reviewers that you know are very thorough.

- Include artwork in drafts as soon as possible. If you cannot include finished artwork in the draft, include a rough sketch or a copy of a similar piece of art with a note about what you plan. If you wait until the last minute to have art reviewed, you risk delay over pieces that must be changed. If necessary, you can have the art package reviewed separately from the review draft, but the signoff copy should contain the finished art in place with the text.

Update packages (sets of loose replacement pages) are increasingly rare, but they do occur. The review draft for an update must give enough context so that reviewers can judge the accuracy of the changes and the effect on the organization. Use the following guidelines:

- Make the changes to information in the source files and clearly mark the changed sections. For review, distribute the whole book or only the pages with changes, but give reviewers enough of the draft so that they know how the update pages fit into the document as a whole.
- Clearly indicate text to be deleted. Reviewers need to see what is being removed before they can agree that deleting it is appropriate.

6.5.4 Distributing Review Copies

There are a variety of ways to distribute copies for formal review. Use the methods that best suit your project.

- Place a copy of the review draft and its accompanying cover letter in a public directory. Use the same directory for all the components of a project. It is a good idea to supply files that can be printed on different output devices (for example, both ASCII and POSTSCRIPT® files), depending on the reviewers' resources.
- Give a hard copy of the review cover letter and draft (the review package) to each signoff reviewer. Personally distribute the draft package to each signoff reviewer. If your signoff reviewers are at another site, notify each reviewer by phone or electronic mail that the review package is coming. You can then send the review package through your facility's express mail service or have reviewers copy the file with the review package.
- In most cases, send electronic mail to the other reviewers with a copy of the review cover letter and the online location of the review package. The reviewers then make their own copies of the review package. However, if you particularly value or need the comments of an informational reviewer, distribute a hard copy of the review package to that person.

  If you have a small list of reviewers, you may make hard copies of the review package for each reviewer and distribute the copies.

- You may also make a number of hard copies of the review package available in your office. Notify informational reviewers that copies are available and where. (However, also give the online location of the review package for reviewers who want to make their own copies.)

6.6 What Reviewers Look For

Reviewers look at different aspects of the review draft depending on their own interests and areas of expertise. While some reviewers have multifaceted talents, there are three general types of reviewers:

- Technical reviewers
- Editorial reviewers
- User reviewers

6.6.1 Technical Reviewers

The technical reviewers are the technical experts whose work is most closely related to your material. For example, the technical reviewers may include the engineers and engineering supervisor for the project. The technical reviewers may also include at least one person from each group working on related projects and technical experts who used to work on this product.

Technical reviewers make sure that the information:

- Accurately describes the product and the system
- Uses technically correct terms and examples that are appropriate to the product and audience
- Is technically complete for the intended audience
- Describes all necessary commands, statements, messages, and so on
- Describes system limitations and trade-offs
- Warns what happens if the product is used in a way that conflicts with the intended use

6.6.2 Editorial Reviewers

The project editor is the chief editorial reviewer. Other people on the review list may also contribute editorial comments, such as the information team project leader, other writers on the project, writing and editing supervisors, writers on related projects, or internationalization representatives.

The editor has distinct areas of concern during the formal review stages. The editor and writers may decide to focus on different aspects at different review stages, as shown in Table 6–1.

Table 6–1 Types of Formal Edits

Formal Review	Type of Edit
First draft review	Substantive edit: purpose, audience, organization, clarity, consistency, usability, accuracy, accessibility, method of presentation, appearance, and style
Second draft review	Depending on the extent of changes from the first draft, may concentrate on style, clarity, and consistency or be a complete substantive edit
Signoff review	Copy edit: grammar, punctuation, spelling, capitalization, consistency

Table 6–2 describes the elements of an editorial review.

Table 6–2 Elements of an Editorial Review

Category	Details
Purpose	• Is the purpose of the information clearly stated? Do users know what they can expect from this component? • Does the component fulfill its stated purpose?
Audience	• Is the audience well-defined? • Does the component contain the right level of detail for the defined audience? • Are the tone and style appropriate to the audience?
Organization and completeness	• Is information in the right place? Should it be moved to another section or another component? Is information repeated within a component or across components within a set? • Is information divided appropriately?

(continued on next page)

Table 6–2 (Cont.) Elements of an Editorial Review

Category	Details
	• Is the method of development logical for the stated purpose and audience? Is the arrangement consistent? • Is the pattern of development easily recognized? Can the users easily find what they need? Do titles show the pattern? Is the pattern consistent? • Is the content relevant to the stated purpose? • Is the material necessary and sufficient? Is there irrelevant information? Is each topic complete? Are all necessary pieces of information (installation procedures, error messages, glossary entries, and so on) included? • Are topics incomplete or needlessly repeated in several parts of the component or set? • Are elements of the same topic scattered throughout the component or the set? • Are appendixes used appropriately?
Clarity and consistency	• Are new terms defined and used consistently? Are technical terms used only when necessary and are they explained well? Should the terms be defined in text or the glossary? Do the definitions follow good glossary practice? • Are abbreviations and acronyms defined? • Is any information misleading or ambiguous? • Are main points properly stressed? • Is there enough overview and introductory material? • Are all chapters introduced consistently? If one chapter has a list of topics at the beginning, do the rest of the chapters? • Are procedures broken down into clear steps? Are the results of each step clear? (See *The Digital Style Guide* for more information on writing procedures.) • Are concepts explained clearly and unambiguously? • Does the information follow the appropriate corporate and formal standards?

(continued on next page)

Table 6–2 (Cont.) Elements of an Editorial Review

Category	Details
	• Are like items (such as titles or labels) presented in the same way? Are chapter and section titles parallel? Are list elements parallel? • Do all elements follow the correct format? • Does the text follow the conventions listed in the preface? Are there any conventions missing from the preface?
Usability	• Is the tone appropriate for the stated audience? • Is the information broken into small, easily grasped pieces? • Are there enough figures, tables, and examples? Are they clear? Is there sufficient explanatory text to accompany them? Are there redundancies between them and the text? See *The Digital Style Guide* for detailed information on figures, tables, and examples. • Does the information follow the elements of proper style? Does it reflect proper grammar, syntax, spelling, capitalization, and punctuation? (See *The Digital Style Guide* for details of Digital style.) • Does the information make appropriate use of basic constructs such as lists, notes, and tables?
Technical accuracy	• Are syntax and symbols used consistently and correctly? • Are procedures complete and logically ordered? • Do the figures and examples match the text? Do they match the product? • Does the information seem technically consistent and complete?
Accessibility	• Is there a table of contents? Does it contain the appropriate level of detail? • Do the titles accurately summarize the content of the sections?

(continued on next page)

Table 6–2 (Cont.) Elements of an Editorial Review

Category	Details
	• Are the cross-references useful and accurate? Are there too many or circular cross-references? • Does the information make good use of navigational cues? • Is there an index? Are the entries complete? Are concepts covered as well as items? Are entries consistent? Are subgroupings appropriate? Is there adequate cross-referencing? Are index entries handled consistently across the information set? (See Chapter 10 for information on creating effective indexes.) • Is online information presented effectively? Are topics of the right length? Does the material make effective use of white space, tables, and graphics? • Do online topics have missing links? Are there unnecessary or confusing links? See Chapter 12 for more information on using navigational cues to improve users' access to information.
Design elements	• Are the layout and typographic design effective? Is the overall design appropriate for the intended audience and purpose? Does the design make effective use of white space, margins, type selection and size, and so on? Does the design use visual cues effectively? • Do the figures contribute to the usefulness of the information? • Is the information presented in charts and figures clearly presented? Is it complete? • Are the charts and figures neat and consistent in design? • Are the charts and figures positioned effectively and correctly?
Internationalization	• Can the information easily be localized? • Does the information avoid the use of culture-specific examples or icons? • Does the information segregate country-specific information?

(continued on next page)

Table 6–2 (Cont.) Elements of an Editorial Review

Category	Details
	• Are art labels produced for easy translation? For example, are labels placed outside the figure elements? See *Developing International User Information* and *The Digital Style Guide* for details of developing information that contributes to the goals of internationalization. In addition to extensive guidelines on creating international information, *Developing International User Information* contains translatability checklists for easy reference.

6.6.3 User Reviewers

The project editor reviews the information from the users' point of view; your review list should also include groups that work with customers:

- Training
- Field test administrator
- Manufacturing
- Product management
- Marketing
- Customer support specialists

Try to encourage these groups to return review comments. You may make arrangements to have certain reviewers look at particular sections and to discuss their comments with you on the phone or in person.

User reviewers review the information to ensure that:

- The preface defines the audience, the prerequisite information, and how to use the information
- The terminology, style, and overall presentation of the information are suitable for the stated audience
- The examples are clear
- System messages are clearly explained and contain recovery procedures
- The descriptions of features are neither optimistic nor misleading
- The stated result of using a feature is verifiable

6.7 Additional Review Methods

You can also use other review techniques to supplement the feedback you receive from informal and formal review or to make the review process more effective. The following sections discuss:

- Peer reviews (Section 6.7.1)
- Review meetings (Section 6.7.2)
- Formal document inspections (Section 6.7.3)

6.7.1 Peer Reviews

Peer reviews are another type of internal review, a means of getting feedback from a committee of experienced colleagues. The peer reviewers usually have experience with a variety of types of information and different audiences and thus bring a broad view to the work. In addition, because they are not associated with the particular component, the peer reviewers provide objective feedback.

A peer review committee consists of representatives from the different user information functions: writing, editing, graphic design, and production. The committee members agree to provide feedback on information submitted for their review. (Submitting information to the committee is usually voluntary. However, in some organizations without editorial support, peer review may be mandatory.)

The peer review committee should have a moderator, who has the following responsibilities:

- Scheduling meetings (many groups hold evaluation meetings once a month)
- Finding projects to review
- Distributing the information to be reviewed
- Moderating the evaluation meetings and presenting the findings to the responsible writer

While a meeting between the writer and the peer reviewers lets the participants talk face to face, holding a meeting may be impractical if the people involved are widely dispersed. In these cases, try teleconferencing or, if all else fails, having the reviewers send comments directly to the writer.

The following list describes the steps in the peer review process:

1. The project writer supplies a hard copy of the draft to the moderator along with a pointer to the online file so that the committee members can copy the file. The writer also provides a background memo summarizing

the purpose of the information, the intended audience, and any special information about the draft.

2. The moderator notifies the committee members of the location of the draft and background memo and the details of the evaluation meeting.
3. Before the evaluation meeting, the committee members review the draft using the criteria the group has agreed on. (See Section 6.6.2 for suggested criteria.) Committee members write their comments on the copies of the review draft.
4. The committee meets with the writer (and other members of the information team as appropriate) to discuss comments and recommendations. This is not a page by page review; rather, the members discuss the component as a whole in terms of its organization, clarity, and so on. The writer receives the hard copies of the draft with the reviewers' comments.
5. The moderator solicits comments from the writer about the usefulness of the review both at the end of the evaluation meeting and after the writer has had time to look at the comments from the committee members. This feedback helps the committee to refine its process and the quality of its work.

6.7.2 Review Meetings

Review meetings provide a means of resolving and recording technical comments from multiple reviewers. They are an effective way to resolve conflicting review comments or to ensure that you receive comments from key reviewers. If there are conflicts, everyone can work at a solution together rather than having the writer move back and forth between reviewers one at a time.

The writer, key technical reviewers, and the editor participate in the review meeting. If appropriate, the writing project leader or writing supervisor can run the meeting to ensure that the meeting runs smoothly and that the writer can copy down all the review comments.

The following list describes the steps in the review meeting process:

- If you know that you will hold review meetings, mention the meetings in the information plan. Include them in the list of milestones, and discuss the need for participation in the Dependencies and Risks section.
- In the review cover memo, clearly indicate when the review meeting will be held and the purpose of the meeting. Also note that, if reviewers cannot make it to the meeting, they must notify you and give you their comments the day before the meeting. You then have the comments at the review meeting.

If the information component is large and certain reviewers are responsible for only certain sections, divide the review meeting so that certain sections are reviewed at specific times. For example, plan to discuss Part I from 9:00 to 10:00, Part II from 10:00 to 11:00, and Part III from 11:00 to 12:00. Clearly state the schedule in the review cover memo.

- Send a reminder to the participants the day before the meeting.
- Bring extra copies of the draft to the meeting as well as any comments previously submitted.
- At the beginning of the meeting, clearly state that the purpose of the meeting is to gather and resolve technical comments on the particular information component.
- Review the component page by page.

  Keep the discussion focused on the issues. The review meeting is neither the time nor the place to redesign the product. If such discussions occur, ask the reviewers to take care of the matter after the meeting. Likewise, let the editor handle editorial issues as the editing subject matter expert.

  Almost all issues can be resolved at a review meeting. If an issue cannot be resolved, make it clear that it is an action item, who is responsible for the item, and follow up to make sure you have resolution.
- Incorporate all comments on a single copy of the draft. The writer has a master copy of the changes approved by the group. The reviewers have their own review copies and can compare them with the next draft.

6.7.3 Formal Document Inspections

A **document inspection** is a formal, highly structured method of internal review by a team of individuals familiar with the information. The inspection process evolved from group reviews of software code and is now used on all types of documents, from planning documents to user information components.

The process works best on components that are beyond the first draft stage. In addition, because the review meeting involves a line-by-line reading of the material, the process is best suited to small modules or components. (In general, the team can go through 250 lines of text in an hour.)

The goal of the inspection is identify, record, and classify problems in the component being inspected so that the writer can then revise the material. The inspection process is not intended to be a time for brainstorming, deciding on strategy, or evaluating the writer's performance. The focus is on the information, not the people involved in the process.

A document inspection team consists of four to five members, all familiar with the material to be inspected:

- Moderator

  The moderator has the following responsibilities:

  - Selecting the inspection team
  - Setting up the inspection review meeting
  - Making sure that the team members have all needed materials for the inspection and are prepared for the review meeting
  - Providing a clean copy of the material being reviewed and the problem report forms to the inspection recorder
  - Functioning as an inspector
  - Running the review meeting and ensuring that the members stay focused
  - Circulating the problem report forms to the team members after the meeting

- Reader

  The reader has the following responsibilities:

  - Functioning as an inspector
  - Reading the component aloud at the review meeting

- Recorder

  The recorder has the following responsibilities:

  - Functioning as an inspector
  - During the review meeting, marking a copy of the component for the writer and recording the problems on the problem report forms

- Inspectors

  The inspectors (including the moderator, reader, and recorder) have the following responsibilities:

  - Reviewing the cover memo and any supporting material before the review meeting
  - Thoroughly reviewing the information component before the meeting, using certain codes to note problems (see Table 6–3)
  - Participating in the review meeting

- Writer

  The writer has the following responsibilities:

  - Preparing an overview memo before the inspection, which summarizes the purpose of the component, the intended audience, and any special information about the material
  - Sending a hard copy of the component to the moderator and supplying the location of the online file so that the inspection team can print out copies
  - Participating in the review meeting
  - Revising the component based on the comments from the review meeting

The document inspection methodology divides problems into four major categories. Table 6–3 lists the categories and describes the codes within each category. It lists the Problem Type (Category 3) codes applicable only to text; it does not list the codes applicable to program code.

Table 6–3 Document Inspection Problem Categories and Codes

Category	Code	Meaning
1. Visibility[1]	VI	Visible to the end user of the product or service
	IV	Invisible to the end user of the product or service
2. Presence	MS	Missing
	EX	Extra
	WR	Wrong
3. Problem Type	AM	Ambiguous statement or antecedent
	EP	Explanation or definition; incomplete information
	GO	Contradiction of goal of this project or a problem with the goal statement in the source document
	IC	Inconsistency in statements in the component
	LR	Legal requirement

[1]This category is applicable only to program code.

(continued on next page)

Table 6–3 (Cont.) Document Inspection Problem Categories and Codes

Category	Code	Meaning
	NS	Information not specific enough for intended audience and purpose
	OR	Organization, overall structural problems
	OT	Other
	RR	Redundant wording
	SC	Semantic content, meaning unclear
	SP	Spelling
	ST	Style convention
	SY	Syntax, sentence structure, punctuation
	TS	Information too specific for intended audience and purpose
	TY	Typography, visual appearance
	UL	Use of language, miscellaneous reasons; grammar
	VB	Verbosity
	VC	Vocabulary, choice of words
4. Quality Dimensions[2]	CM	Compatibility
	CN	Constraints, trade-offs
	CO	Cost
	CS	Conformance to standards
	EN	Environment
	ES	Esthetics
	FE	Features
	HF	Human factors, usability, ease of use
	MN	Maintainability
	PK	Packaging

[2]This category is useful mainly for demonstrating progress towards meeting a set of quality goals.

(continued on next page)

Table 6–3 (Cont.) Document Inspection Problem Categories and Codes

Category	Code	Meaning
	PR	Performance
	RE	Reliability
	TM	Timeliness

The following list describes the steps in the document inspection process:

1. The moderator plans and prepares for the inspection, including estimating the amount of time needed for the review meeting and selecting the team members.
2. The writer gives a hard copy of the draft to be reviewed to the moderator, along with the overview memo and any necessary supporting information. The writer also supplies the online location of the files so that the team members can print them out.
3. The moderator sets up the review meeting and notifies the team members. The moderator supplies the team members with any added information they need (such as the problem categories and codes).
4. The inspectors thoroughly review the information component.
5. A day or two before the meeting, the moderator checks to make sure that the inspectors are prepared for the meeting. If they are not prepared, the review meeting is postponed.
6. At the review meeting, the reader reads aloud the draft, line by line (except for boilerplate information).
7. The inspectors raise problems as they occur, and the team classifies the problem.
8. The recorder records the problems on the problem report form and marks a copy of the draft for the writer.
9. At the end of the meeting, the team decides whether another inspection is needed after the writer revised the draft.
10. The writer receives the problem report form and the marked-up draft.
11. The moderator creates a summary report for management. The report contains the name of the document, the list of participants, the time it took for the inspection process, and the reinspection decision.

12. The moderator also creates a quality control report, which includes a summary of the problem types by category.

6.8 Incorporating Review Comments

After each review period, the writer must evaluate the review comments and revise the draft based on the comments. Including comments from just ten review copies can be a large task, so the writer should begin processing comments as soon as they are received.

The writer can add some comments directly to the draft. However, many comments require that the writer:

- Rewrite passages to make them clearer
- Investigate technical questions
- Research user practices further
- Decide among conflicting comments

Often the writer must do more research and use the product even more than for the first draft.

The writer must prioritize review comments and pay particular attention to the technical comments. Incorporating comments from the technical experts first may be most efficient: technical changes may have a dramatic effect on the material, making some other comments irrelevant because the section has been deleted or radically changed.

6.8.1 Responding to Comments

Reviewers like to know that the writer has considered their comments. If the reviewers know that they have been heard, they are more likely to give useful comments on future drafts.

As writers go through review copies, they can take a moment to mark the review copy so the reviewer knows what action was taken on the comment. A checkmark or word or two is enough: "OK," "thanks," "project leader disagrees," "no time — will consider for later," and so on. Once the writers have gone through the review copy and decided how to incorporate the material, they may then return the review copies to the reviewers. The reviewers then know that their comments have been considered and can still talk with the writers if they disagree on issues. The reviewers also have their comments in hand when they review subsequent drafts.

6.8.2 Handling Late Review Comments

Most reviewers are conscientious about returning review comments on time. However, some reviewers may have other commitments that cause them to miss the deadline. Writers can use several techniques to ensure responses to review:

- Some reviewers are chronically behind schedule. The writer can try to get the drafts to these people early.
- The writers can call or visit late reviewers.
- If the draft is long, key reviewers are unavailable, or some project milestone has slipped, the writers can extend the review date and notify all reviewers.
- If important reviewers have other commitments and cannot return comments on time, the writers can make arrangements for those reviewers to look at only certain sections.
- If all else fails, the writers can make arrangements to meet with the late reviewers and go over the draft.

Writers should keep their project leader and supervisor informed if there are chronic problems with late comments. The project leader and supervisor can work with the funding or technical group to resolve the problem.

If the team has established good working relations with the reviewers before the draft stage, the reviewers know their opinions are important and will cooperate as much as possible.

Some useful comments will come in too late to incorporate into the current draft. In this case, the writer can incorporate the change into the next review draft. If the comment was from the signoff review, the writer can consider making the change in the next version or, if it is a substantive technical change, adding the material to the product release notes.

6.9 Field Test Review

Field test review is a special type of formal review in which the product and the user information are sent to selected customers. Field test gives the user information team the opportunity to get feedback from the people who use the information to install, run, and maintain the product. The terms *Alpha test* and *Beta test* are also used to refer to the concept of field testing.

The purpose of field test is to:

- Find errors and omissions in the product and the user information before the product is released

- Verify that the user information is complete and accurate
- Verify that installation procedures are correct
- Make sure that the product works and performs as intended

The length of field test varies from project to project, and a given project may have multiple field tests (known as *field test updates* or *FT1, FT2, . . . , FTn*). Field test customers may also particiapte in field test training, which provides information about new product features. The training period varies, from 1 day to as many as 5 days.

An individual on the product team is usually responsible for choosing the field test sites based on the criteria in the project planning documents. The field test administrator looks for customers who will test the product in ways that the product is expected to be used in the real world. The administratoris also responsible for getting the product, including the information, to the customer sites and polls customers for feedback, reporting the results to the technical group.

6.9.1 Improving Results from Field Test Review

Unfortunately, during field test, customers tend to test the product more carefully than the user information; as a result, the information team may get little or no feedback. This happens for several reasons:

- Many field test customers are already familiar with your company's products. They may feel that they are familiar enough with the product so that they do not need to use the user information.
- A customer support specialist is sometimes available at the field test site for training and assistance. As a result, customers may not have an incentive to use the information set.
- Field test may occur relatively late in the product development cycle and, because of the time needed to produce and manufacture the information, there is little time to include useful suggestions. However, the review and revision cycle applies across product versions. Keep the suggestions from field test on file, and use them for planning the next version of the information.

How can you help ensure that you get useful feedback from real users? The best way is to provide clear, usable, well-designed field test information. Include an index and as much artwork as possible. You may also:

- Sit in on or participate in any field test training. Work with the technical group, field test administrator, and the training group for more information.

- Include the writer's name and phone number on the field test drafts, which has allowed some writers to make useful contacts.
- Send two copies of the user information, one to be returned with comments and one that the customer can keep.
- Schedule an information-only field test, separate from the product field test. This separate test is useful if you are experimenting with a new approach or book.
- Send out a questionnaire about the user information. Check to see if the field test administrator can distribute and return the questionnaire if you prepare it. You may write a separate information questionnaire or append it to the engineering questionnaire if there is one.

  Work with the field test administrator and product management to conduct a telephone interview of selected customers.
- Visit a customer site, if time allows. Work with the field test administrator and product management to set up the visit. (Before you make any contact with customers, make sure you call the appropriate sales account manager. Account managers must be informed of any contact between you and their customers so that they can be fully informed when talking with the customers. You may also want to talk with the local service representative before the visit.) In addition:
  - Call the site in advance to make the arrangements. Clearly explain who you are and why you are visiting. Make sure the customers install the product before your visit, and request that they look at the user information before the visit. (If you do not clearly convey the purpose of your visit, you may be asked to install the product or teach how to use it when you arrive.)
  - Time your visit carefully. If there is no on-site training program, do not visit the site before the users have had a chance to use the product and the information. On a project with several field tests, go to a site in the middle of the field test cycle, if possible, so that you have time to incorporate the feedback into the user information.
  - Be prepared to talk about the product, not just the user information. Customers see you as a representative of the project as a whole.

  Even if you gather little direct feedback on the user information, the visit is still a valuable experience. You learn more about your audience and their work environment, and you see the product from the customer's viewpoint.

You can supplement your feedback from field test sites with feedback from internal users.

See Chapter 13 for information on designing and implementing questionnaires, interviews, and other usability studies for both internal and external users.

6.9.2 Incorporating Field Test Review Comments

Incorporating field test comments is similar to incorporating comments from formal review. However, you may not be able to discuss the comments with the reviewers. Rely on your best judgment about which comments to incorporate, combined with advice from your key reviewers. If you have developed a good relationship with several customers (through site visits, for example), then you may be able to use a more personal approach in discussing comments from field test. (However, be sure to coordinate this contact with the product manager and sales account manager before talking with the customer.)

In addition to comments from your own field test questionnaires and site visits, you may also receive comments through the technical group or the group that manages the field test.

Some of these comments deal directly with the user information, while others deal with the product; product changes, however, usually mean changing the corresponding section of the user information. If field test comments point out a problem with the user information, you must answer the comments. Ask your supervisor about how to receive and respond to such comments.

6.10 Online Information Review

Because of their media, online books and online help have some special requirements during the review process. However, it is important for the online information to receive the same rigorous review as the hardcopy information.

See Chapter 11 and *Developing International User Information* for information on creating online information.

6.10.1 Online Books

Online books are created and processed in generally the same manner as hardcopy books. This is true whether the information is available both in hard copy and on line or on line only. The writer sends a hard copy of the information through the regular review process so that reviewers can examine it for accuracy, usability, organization, and so on. See Section 11.1 for more information on online books.

However, the information team must also regularly check the completeness and presentation of the information on line throughout the review cycle. Use the following checklist to help in this evaluation:

- Each book has the following elements:
  - Table of contents.
  - Index. (The Bookreader application does not require an index. However, the index is one of the main ways that users navigate the book, and the book's usefulness is constrained without an index.)
  - Front matter (title and preface) that is in one file.
- The table of contents is complete and accurate. There are no duplicate section names. If any problems occur, check the symbolic names for accuracy and uniqueness.
- The topics are not too large. If they are and it makes sense to make them smaller, break them up into smaller topics. (See Chapter 4 and Section 11.1.2.1 for guidelines on dividing information into topics.)
- The informal figures, tables, and examples are not too wide for the screen. If they are, put them in their own pop-up window. (See Section 11.1.2.3 for information on using pop-up windows.)
- Each formal figure, table, and example has a hotspot in text so that users can access the formal element.
- The annotations are included in the pop-up windows for figures, tables, or examples that you want to display in a pop-up windows. Otherwise, the text is hidden by the graphic.
- Wherever possible, the information is presented graphically (for example, in lists, figures, and tables).
- The list of conventions does not say that user input is shown in second color (red, for example). If it does, add a sentence to say that user input is shown in bold for the online version.
- All user input in examples is clearly identified.
- There are no hardcoded references to chapters, sections, appendixes, part numbers, or formal figures, tables, or examples. If hardcoded references are used, delete them and use the symbolic names instead.
- The text does not overuse boldface type, italic type, or uppercase letters for emphasis. Such typeface changes are more noticeable on line than on paper.

- The text in the book is not too dense, and the design uses sufficient white space. Much dense text on the screen is difficult to read. Where possible, break long paragraphs into several short ones, use lists to emphasize information, and consider replacing text with art.

In addition, during formal reviews, the editor reviews the online books for style and usability, ensuring that the information is easily accessible and as clear, complete, and well-organized as possible. In the online review, the editor looks at the following aspects of the online book. Many of the questions are not unique to online information, but the proper use is particularly crucial for online information.

- Do titles accurately reflect the contents of sections? Is information divided into the proper topics? Are topics of a manageable length? Could a topic be further divided? Are lists used to break up the density of text? See Section 11.1.2.1 for a discussion of online topics.
- Does each chapter begin with a list of the topics covered in the chapter? Can the user get to the topics from this list? (In Bookreader, each topic is a hotspot, and the user is able to click on this hotspot with the mouse and jump to the appropriate section. See Section 11.1.2.2 for more information on hotspots.)
- Is artwork well used? Could some text be better presented visually? Do figure captions define the content of the figure?
- Is information easily located, either through the table of contents or the index? Given sample tasks that users might perform, how quickly can the information be found through the table of contents and the index?
- Does the index give synonyms to help users find the information they are looking for? Is the index complete and well organized? Are all tasks represented? Using just the index, can the user find a piece of information with a maximum of two tries?

See Section A.3 for more information on checking the quality of online books.

6.10.2 Online Help

Reviewing online help is more difficult than reviewing online books because the information may be seen out of context. However, the following suggestions can help make the review go more smoothly:

- At first review, the writer distributes to the reviewers a hardcopy version of the help files and an outline of the help structure. If possible, the help files are also available for online review. The reviewers check the structure and logic of the help files.

- At second draft review, the writer again distributes a hardcopy version of the help files and an outline of the help structure. The online help files are also available for checking. The reviewers:
  - Test the online help by navigating through additional topics and context-sensitive objects.
  - Review the usability and writing style of the help frames.
  - Review the help text for proper grammar, spelling, capitalization, punctuation, and consistency. (The project editor is usually responsible for this type of check.)

  The reviewers make their comments on the hard copy of the help files and return the comments to the writer according to the schedule.
- At signoff review, the writer distributes a hard copy of the help files. Reviewers again check the help for accuracy, clarity, usefulness, style, and appearance.

  After the writer incorporates the signoff review comments, the information team does a final check on the accuracy of the links between topics.

6.11 Final Signoff

Final signoff is the formal approval indicating that the user information is ready for production and manufacturing. It occurs after the final signoff review. Signoff indicates that, to the best of the signoff reviewers' knowledge, the information meets the goals of accuracy, appropriateness, accessibility, clarity, and completeness.

The number of reviewers with signoff authority varies with the complexity and type of project. Include the following functions:

- Editing
- Funding organization
- Product manager (if there is one)
- Technical experts
- Writing

As with the signoff of the information plan, the authority of individuals to commit to the plan may differ by functional organization. For example, the manager of the funding organization may be the only individual in that group who can sign off on the information plan, while the supervisor of the technical group has the authority to commit to the plan. Likewise, on some projects,

the functions overlap. For example, the engineering group may be both the funding group and the responsible technical group.

At the end of the signoff review period, the writer meets briefly with each signoff reviewer to get approval. Some reviewers will not sign off if they still want corrections made. The writer can discuss the requested changes with the reviewer; often the person will sign off if they know the changes will be made.

Managers often rely on those who are technically closest to the project to judge the information's accuracy and will not sign off until the supervisor and project leader have signed off. Therefore, it is often good practice to get the writing supervisor's signature before the writing manager's and the funding project leader's and supervisor's signatures before the funding manager's signature.

The form for signoff varies by group. Figure 6–2 shows a sample form.

Figure 6–2 Sample Signoff Review Form

Final Review
Signoff Sheet

DECProduct Guide to Programming

Document Title | Part Number

Jacqueline Dickinson
Writer | Date

- Editing's signoff indicates that this material has received a full literary/style edit, incorporates the agreed organizational and style changes, and has been copy edited. The writer has incorporated the changes or has agreed to do so.
- Writing's signoff indicates that the material has been reviewed for content, style, and organization, that it meets the group's quality standards, and that the material is ready for final production.
- The technical group's signoff indicates that the material accurately describes the product, the examples are correct, and the coverage is appropriate for the intended user.
- The funding group's signoff indicates that the material meets the agreed goals for the project and that the coverage is appropriate for the intended user.

Editor | Date

Writing Supervisor | Date

Writing Manager | Date

Engineering Project Leader | Date

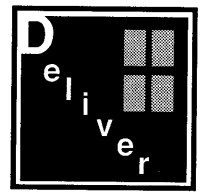
Engineering Supervisor | Date

Engineering Manager | Date

Product Manager | Date

7

Production and Distribution



The process of bringing an information set through production and delivering it to a supplier changes as the technology changes. The tasks required for preparing a document for delivery are constantly changing. As a result, Digital information groups are redefining what production means today, and they are modifying their methods to fit the new processes.

In this chapter, **production** refers to the steps that are needed to prepare a final document for delivery to a supplier. These steps begin when a writer has incorporated all technical and editorial review comments and the document is stable. Production ends when the final document, in electronic or hardcopy form, has been sent to an internal organization or external supplier.

Each information group within Digital has its own process for handling the details of production, depending on the group's needs. Although each group must perform the same major steps, the group may use a variety of approaches and methods. This chapter discusses the common elements of the different group processes, as well as some of the options available for delivery. The processes and tools described in this chapter are specific to Digital. Use the steps described only as a guideline; consult your own group's production guidelines for specifics.

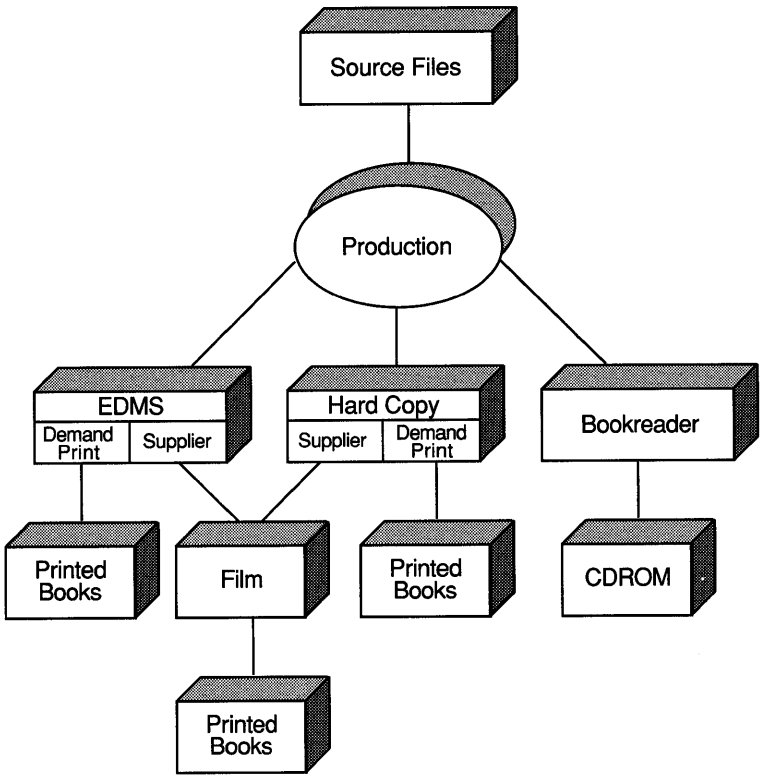
Information groups now prepare their information sets for a variety of delivery methods, including the following:

- Submission of hardcopy documents to an internal organization or external supplier for distribution as film or printed books (Section 7.1)
- Submission of electronic files to an internal organization or external supplier for distribution as film or printed books (Section 7.2)
- Submission of electronic Bookreader files for distribution on CD–ROM (Section 7.4)

Section 7.5 briefly describes duplication, printing, and distribution services.

Figure 7–1 shows the process flow for these production and delivery methods.

Figure 7–1 Production and Delivery Process



7.1 Submitting Hardcopy Reproduction Packages to Internal or External Suppliers

A hardcopy submission or delivery means that a complete hardcopy package containing the repro proofs and mechanicals (or camera-ready copy) and all the related production material is sent to an internal or external supplier. The user information group is responsible for ensuring that the camera-ready copy is of good quality and suitable for printing.

Once the supplier has received the package, they produce film or printed books, depending on the requirements for the product. Within Digital, film is required for simultaneous worldwide distribution.

7.1.1 Preparing a Final Copy of the Document

A document is considered final when all art is in place, each page is proofread (if this step is required by your group), last minute edits are verified, and final pagination is made.

Most documents receive some level of proofreading. The timing and responsibility for proofreading varies from group to group. Proofreading may be performed by in-house editors, contract proofreaders, or an off-site proofreading supplier. Proofreading comments are marked on the hard copy, and when proofreading is complete, the appropriate edits are made to the file. The marked hard copy is checked against a new printout of the file.

The document should be processed one last time during production to ensure that the latest technical changes, proofreading edits, and art changes are in the final copy. Responsibility for performing the final build varies from group to group.

The final hard copy of the document is often called the **master copy** or the **repro proofs**. It contains the following elements:

- Title page
- Copyright page
- Table of contents
- Part pages
- Preface
- Chapters
- Appendixes
- Index
- Reply card and mailer

Check the contents of the book against the table of contents to ensure that all pages are in the repro proofs. Also check to see that all pages are clean and text is straight. If there is a proprietary classification, check each section to be sure the proper proprietary listing is printed on each page.

See Section A.6.1 for more information on quality standards for repro proofs.

7.1.2 Preparing Related Materials for Delivery

The delivery of an information set is simply the act of sending the final package to the supplier. In addition to the repro proofs, the information team must prepare the following items that make up the **reproduction package**:

- Assembly sheet

  The assembly sheet lets the film and print suppliers know what to expect in the master package. The assembly sheet indicates the book covers, the total number of pages including blanks, the location of pages with special treatment (for example, color) the location of any tabbed dividers, and any perforations.

- Print specification

  A print specification is a form that contains the following specifications for the purchasing group and the print supplier:

  - Text and cover paper stock
  - Cover specifications
  - Ink colors
  - Special considerations (photographs, bleed pages)
  - Type of binding
  - Type of film master proof

  Within Digital, the print specification may be created as a hard copy or by using an online program that is part of an internal electronic submission tool. See Section 7.2 for more information on electronic submissions.

- Mechanicals

  Cover, spine, and tabbed divider mechanicals are created manually by the designer or by using an online program that is part of an internal electronic submission tool. See Section 7.2 for more information on electronic submissions.

- Waiver, if necessary

  You may also need to include a copy of any waivers approving deviations from your company's publishing or manufacturing standards.

- Color and screen markup copy, if necessary

  If the copy requires screens or multiple ink colors, a hard copy must be marked up for the film supplier.

- Sample layout page (recto/verso page layout sheet)

  The sample layout page identifies the right and left page position.

See Section A.6 for more information on quality standards for the components of a reproduction package.

7.1.3 Preparing a Final Reproduction Package

The **final reproduction package** is the complete and final package that is sent to the film supplier. It consists of the master copy, assembly sheet, print specification, waiver, color and screen markup, mechanicals, a sample layout page, and a folding dummy if a reference card is included. At this point, a final build has been performed, pasteup is completed, and the camera-ready copy is ready for review.

The writer, editor, or production representative reviews the camera-ready copy to ensure that all parts of the component are present. It is not the time for an exhaustive proof of the component.

Before sending the final package to print, make copies of the repro proofs because the film supplier may call with questions about particular pages.

In most groups, a production signoff process is required before the information set goes to the supplier. This process may involve the collection of signatures from various contributors and managers, or it may be a verbal approval from the project leader. Follow the procedures practiced within your group.

7.2 Submitting Electronic Files

Within Digital, user information groups may also submit their information sets electronically to manufacturing using EDMS (Electronic Documentation Mastering Standard). EDMS is an internal Digital suite of tools that allows documentation to be printed from specially formatted, industry-standard POSTSCRIPT files. These files contain information that lets them be translated or processed by the film and print suppliers without the need to photograph camera-ready copy. EDMS provides the flexibility to go to high-volume (offset press) or low-volume (demand print) printing from the same set of master files. In addition to embedding specific formatting information within files, EDMS also provides different types of output. Information groups can use two modes for proofing, and suppliers can direct output for either film or plates. EDMS also includes electronic tools for developing assembly sheets, print specifications, and mechanicals.

Besides eliminating the need to prepare camera-ready copy and subsequent paste-up and repro packaging, EDMS also provides other benefits:

- Higher quality film (1200 to 2400 dots per inch versus 300 to 600 dots per inch for camera-ready masters)
- Lower costs
- Reduced time to market

7.3 Reviewing Film Master Proofs

A **film master proof** is a preprint review copy of a document made from stripped-up film negatives. A common type of proof is called a **salt** or **blueline**. User information groups used to request these proofs routinely as a way to verify that the film was prepared properly. However, most Digital groups have eliminated the proof approval process, unless their information set contains four-color process printing. In such a case, the group can request an **integral proof**, which gives a facsimile of the final four-color process printing.

7.4 Submitting Electronic Bookreader Files for Distribution on CD–ROM

Digital information sets are distributed every other month on an OpenVMS or ULTRIX compact disc through the corporate CD–ROM program. The OpenVMS disc is released every other month, beginning in January; the ULTRIX disc is released every other month, beginning in February. These discs are commonly referred to as OLD (Online Documentation) discs.

To participate, the information group must first create their information files for the Bookreader application, as described in Chapter 11. The group also determines on which disc and for which month their information sets will be released.

A central organization within Digital handles the consolidation of the files for both the OpenVMS and ULTRIX discs. This group provides a schedule, which includes dates for when files must be submitted to them for release on a particular disc.

Once an information group knows what documents they plan to submit for release on a disc, they fill out and submit an online form to the consolidation group several weeks in advance of the submission of files. This form contains information on file names, bookshelf titles, file size, and so forth. When it is time to submit the Bookreader files, the information group copies them to a public directory maintained by the consolidation group.

7.5 Duplication, Printing, and Distribution Services

Many publications groups at Digital produce files or camera-ready copy and rely on other organizations for duplication, printing, packaging, kitting, supply, and order fulfillment. These organizations are here collectively referred to as manufacturing. Manufacturing is a worldwide network of sites responsible for the introduction and supply of products to customers.

The publications groups often rely on the manufacturing group for the following types of activities:

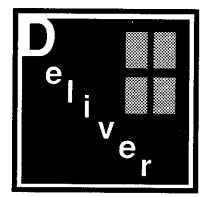
- Choosing suppliers for the manufacturing of film and printed books
- Working with suppliers to ensure quality control
- Packaging, kitting, storage, and distribution of information, including technical user information, promotional and marketing literature, course materials, and so on

In Digital, different manufacturing organizations also provide services such as:

- Media mastering and duplication
- High-volume and on-demand printing
- Mass mailing services
- Collating, assembly, binding, and packaging services

8

Project Closure



The responsibilities of the information team do not end when the project is delivered for manufacturing. The information team needs to evaluate and bring the project to its proper close. Team members must review their individual and collective efforts, solicit evaluation from the funder, and determine how to respond to user feedback on the released product.

This chapter describes the following the closure activities:

- Reviewing the project's success through the post-project review meeting (Section 8.1)
- Determining the satisfaction of the funder (Section 8.2)
- Responding to reader comment cards and other types of user feedback (Section 8.3)
- Archiving source files for future use (Section 8.4)

8.1 Post-Project Review

A **post-project review** (also known as a *postmortem* or *postpartum*) is a meeting that gives the people responsible for the user information the chance to discuss their roles on the project, identify their successes, and offer solutions for any problem areas. The focus of the review is on the process, not on interpersonal issues.

The information team project leader or writing supervisor is usually responsible for arranging the post-project review meeting, though any member of the team may take on this responsibility. The meeting typically occurs within a few weeks after the information has been delivered for manufacturing. This delay allows enough time for the team members to reflect on the project but is not so late that everyone has forgotten the project details.

The general objectives of any post-project review include:

- Providing an equal opportunity for all members of the team to express their opinions.
- Assessing how well the project met its goals.
- Identifying what worked well so that those processes can be used again.
- Identifying problem areas and recommending improvements.
- Improving the quality of the information by improving the quality, efficiency, and productivity of the information development process.
- Comparing the estimated and actual costs of the project. Making recommendations to reduce costs.
- Comparing the estimated and actual time spent on the project. Making recommendations to reduce the time to complete a project.
- Discussing the communication flow between the different members of the information team and between the information team and the other project team members. Recommending changes to improve communication.

8.1.1 Post-Project Review Participants

Ideally, any member of the information team for the project should have input to the post-project review.

The participants usually include the following individuals:

- Each writer on the project
- Information team project leader
- Editor
- Funding group representative
- Graphic designer
- Production specialist
- Supervisors of the different functional areas within the information group
- Technical project leader
- Translation coordinator
- Manufacturing representative

Depending on the size of the team and other constraints, either all members of the information team or a representative from each function participates in the review meeting. You can also add other people as appropriate for your project; for example, you may include the usability engineer.

Some groups hold an initial project review meeting for the information team only. After the meeting, the project leader or supervisor works with the funder to review the group's recommendations and gather the funder's feedback. A meeting for the information team only may be helpful if:

- The information team is very large
- There were difficulties within the information team
- There were difficulties between the information team and other project groups

8.1.2 Preparing for the Post-Project Review Meeting

The information project leader or supervisor sends a memo to the participants at least a week before the review meeting. The memo clearly states:

- The purpose of the meeting
- The order in which representatives of each function will give their feedback and the amount of time allotted

The memo may also suggest areas that the representatives consider before the meeting:

- Performance
  - Were the project objectives completed?
  - What variables enhanced or hindered the project's completion?
  - What improvements can be made to the process to ensure the success of future versions? (For example, what improvements can be made to the review process, field test process, and so on?)
- Cost
  - If a cost estimate was given, did the actual cost meet or exceed the predicted cost? Why?
  - What improvements can be made to help future projects meet cost estimates?
- Time
  - How long did it take to complete the project?

- Was this time longer than was anticipated?
- What factors influenced the schedule?
- What improvements can be made to help future projects better estimate time needed? Can the information development process be made more efficient?

- Communication
  - Were members of the information team well-informed about project goals and changes?
  - Was communication clear between the information team and the other project team members?
  - What improvements can be made to the process to ensure clear communication on further projects?

8.1.3 Post-Project Review Meeting

The review meeting is run by a moderator, who has the following responsibilities:

- Ensuring that someone takes minutes of the meeting. The minutes are later drafted into the post-project report.
- Beginning the meeting with a brief history of the project and a summary of the project goals.
- Reviewing the order in which the groups will give their feedback and the time allotted.
- Ensuring that each group has the opportunity to speak, that the discussion does not descend to the personal level, and that the group keeps to the problem-solution format.
- Ending the meeting with a summary of the major points made during the meeting.

8.1.4 Post-Project Report

The writing supervisor or information team project leader (or some other designated member of the team) writes the post-project report based on the minutes of the meeting. The report is then sent electronically to the meeting participants, who review it for accuracy and completeness.

The written report summarizes the project for the present contributors and helps the information group improve its processes. In addition, the report gives background information for the next version of the product or for similar projects.

After the report is approved by all the participants, the writing supervisor or project leader archives the report with the other project documents.

8.2 Client Satisfaction Survey

A project evaluation survey is a closure technique designed to address a funder's satisfaction with the information group's services and processes and with the final information set. The survey results tell the information group how the funders perceive the group's effectiveness in specific areas.

If possible, distribute the survey electronically. Electronic distribution is faster than hardcopy distribution, and it is easier to collect and process the replies.

The client satisfaction survey has the following advantages:

- Is a low cost method of gathering feedback
- Allows respondents can take their time to collect facts, talk with others, and consider replies at length
- Is perceived as being more impersonal, thus providing the feeling of anonymity and, consequently, resulting in more honest answers

However, there are disadvantages:

- The response rate is often low.
- Questions cannot probe too deeply into content.
- Questions cannot be long or complex.

The following sections discuss the types of questions a survey may contain and ways to improve survey results.

8.2.1 Sample Survey Questions

The way you design and administer your survey affects the number and quality of the responses. See Section 13.1, Section 13.2, and Section 13.3 for more information on planning and implementing surveys. See Section 13.5 for more information on designing questionnaires.

Many satisfaction surveys use what is known as the **Likert scale** to weigh responses to questions. The respondents are asked to respond to each statement by marking one of five degrees of agreement: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

Figure 8–1 shows a sample client satisfaction survey.

Figure 8–1 Sample Client Survey

Client Satisfaction Survey
DECproduct Version 1.0

The following survey will help the DECproduct User Information group evaluate their services and improve their processes. Please indicate how strongly you agree or disagree with each statement.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1. The information is well organized.	____	____	____	____	____
2. The information is well written and easy to read.	____	____	____	____	____
3. The writer acquired sufficient knowledge of the subject matter to communicate the material effectively.	____	____	____	____	____
4. The information team contributed to the product design.	____	____	____	____	____
5. The design and format of the information are visually pleasing.	____	____	____	____	____
6. The print quality is sharp, clean, and professional.	____	____	____	____	____
7. Cost and time estimates for this project were clear to me.	____	____	____	____	____
8. The information plan milestones were met.	____	____	____	____	____
9. There was effective communication with the information team.	____	____	____	____	____
10. The project's status was communicated regularly.	____	____	____	____	____
11. The information development process was well managed.	____	____	____	____	____
12. The information was printed and distributed in a timely manner.	____	____	____	____	____

8.2.2 Improving Survey Results

Notifying participants about the survey in advance, particularly by telephone, is an effective way to increase the number of responses. It also tends to accelerate the rate of return.

In addition, follow-ups or reminders are a good way to increase the response rate. Because each successive follow-up results in added returns, you can gather many responses. However, you must also weigh the value of the additional information against the time needed for successive contacts and for evaluating the responses.

8.3 Reader Comment Cards and Other Feedback

Information groups use various means to find out what users think about the user information. This material not only gives feedback on the success of the most recent release but also serves as the foundation for the plans for the next version.

For example, site visits, questionnaires, and so on are all valuable ways of gathering feedback. See Chapter 13 for information on designing and implementing different types of usability studies.

However, there are two common types of user feedback that the information group must address:

- Reader comment cards

  The reader comment card is either a separate card or a page within a component. The card is automatically sent to the user with the user information. Customers mail the preaddressed cards back, where they are processed and distributed to the information group responsible for the product. Figure 8–2 shows a sample reader comment card.

  The rate of return on reader comment cards is often low. The responses usually come from two extremes: those users who are very pleased with the information and those who are very dissatisfied. Thus, the information may not be totally useful in gauging the effectiveness of the information set. However, the comments may also give useful information about errors in the information.

  Respond to all comment cards. If users take the time to fill out and send in the cards, they deserve the courtesy of a reply. Often, you can send a form letter thanking the user for the comment and promising to consider the comment for the next version. At other times, you may need to work with other groups to solve a particular problem. For example, users sometimes receive defective documents and need to know how to get a clean copy.

Figure 8–2 Sample Reader Comment Card

Reader's Comments **Introduction to DECproduct**
XX–XXXXX–XX

Please use this postage–paid form to comment on this document. If you require a written reply to a software problem and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Thank you for your assistance.

Information Rating:	Excellent	Good	Fair	Poor
Accuracy (product works as document states)	____	____	____	____
Completeness (enough information)	____	____	____	____
Clarity (easy to understand)	____	____	____	____
Organization (structure of subject matter)	____	____	____	____
Figures (useful)	____	____	____	____
Examples (useful)	____	____	____	____
Index (ability to find topics)	____	____	____	____
Page Layout (easy to find information)	____	____	____	____

I would like to see more/less _____

_____

What I like best about this document is _____

_____

I found the following errors in this document:

Page Description

_____ _____

_____ _____

Additional comments or suggestions to improve this document: _____

_____

I am using Version_____ of the product this document describes.

Name/Title_____ Dept. _____

Company_____ Date _____

Mailing Address _____

_____ Phone _____

- Product problem reports

  Depending on their service contracts, customers may send in problem reports when they find problems with the product, including the user information. (For example, Digital software users may send in Software Performance Reports [SPRs].) Engineering groups are usually measured on how quickly they respond to problem reports. Therefore, if there is a problem report dealing with the user information, you need to take care of it as quickly as possible to avoid jeopardizing your relationship with the engineering group.

Before the members of the information team go on to other projects, the team must assign someone to track and respond to reader comment cards, problem reports, and other user feedback.

8.4 Archiving

The last step in closing the project is archiving, saving the files and documents that may be needed in the future, either for reference in working on the next version or for recreating the information if needed. What you archive and how depends on your group's facilities, tools, and processes. Use the following as guidelines:

- Keep the source files of the user information for the most recently released version of the product. If you use a file management tool for your work group, make sure the latest versions of the files are included and are identified in a way that allows them to be retrieved easily. If your organization has a group library, include the final versions of the files in that library as well.

  Depending on your group's volume and processes, you may need to keep some of this information on tape or some other backup mechanism (some groups make multiple copies in case of problems). Clearly label the tapes, and make sure that someone knows where the tapes are and how to access the information.

  You may also archive a copy of the reproduction package for each hardcopy component in case you or the manufacturing group needs the materials to make more copies.

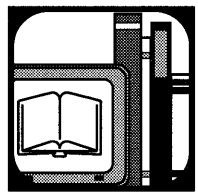
- Keep a copy (online or hardcopy) of the most recent user information plan and post-project review report. These documents provide background for the team responsible for researching and planning the next version of the information. If other planning documents were particularly insightful, you may also save copies of those documents.

- Keep on file constructive user feedback, such as reader comment cards that point out errors to be fixed in the next version or the results of user surveys. If the group sent out a client satisfaction survey, also keep on file the results from that survey.

Whatever archiving methods you use, be sure that the team agrees who is responsible for each step and where the information will be kept. Also be sure that someone in the group understands how to access the information in whatever form it may be in. Otherwise, the file you desperately need will be the one that no one knows how to open.

Part III
Techniques

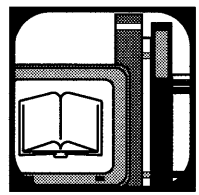
The chapters in this part discuss the following topics:



- Terminology consistency
- Indexing
- Online information
- Navigational cues
- Usability studies
- Trademark searches

9

Managing Terminology



Clear technical information uses all terminology consistently and appropriately. The consistent use of terminology helps users understand the information more easily and makes the translation process easier.

In a fast-paced environment like the computer industry, using terminology effectively is a continuing challenge. New words are created, grow in popularity, and become obsolete with astounding speed. New concepts and products are constantly developed and need new terms to describe them. The information team is thus faced with different types of problems:

- The industry borrows words commonly used in the language but gives them a specialized meaning. For example, the word *icon* has taken on a specialized meaning in the computer industry:

  icon (*Webster's Ninth New Collegiate Dictionary*)

  1. A usually pictorial representation. 2. A conventional religious image typically painted on a small wooden panel. . . .

  icon (Project glossary)

  A symbol that represents an application, object, process, or window.

- Similar environments develop different terms for the same object, idea, or process. For example, most operating systems have similar capabilities for managing files, but each operating system may use different terms to describe the functions or objects. OpenVMS systems use the term *file specification* for the location of a file, while ULTRIX systems use the term *pathname*.

- Concepts and objects are described by awkward phrases, such as *floating underflow trap enable bit* or *user-customized advanced editing function*. Groups then create abbreviations and acronyms to avoid the repetitive use of the long phrases. Unfortunately, both the phrases and the proliferation

of acronyms make the user's understanding and translation to other languages more difficult.

This chapter describes techniques you can use to ensure that your information uses terminology clearly and consistently:

- General principles for managing terminology (Section 9.1)
- General guidelines for avoiding translation problems (Section 9.2)
- Style sheets and word lists (Section 9.3)
- Glossaries (Section 9.4)

See Appendix B for bibliographic information for reference works, dictionaries, and glossaries used within Digital.

9.1 General Principles for Managing Terminology

Use the following guidelines to maintain consistent terminology:

- Use terms consistently:
  - Do not use different terms for the same object. For example, do not use *program* in one place and *executable image* in another.
  - Do not use the same term for different objects. For example, do not use the term *file name* to refer both to the file name field of a file specification and to the full file specification.
- Define terms clearly either in the text or in a glossary. If there is any doubt about users understanding a term, define it. See Section 9.4 for more information on creating glossaries.
- Use typographic and symbolic conventions consistently, and define them in a conventions table in the preface. See *The Digital Style Guide* for more information on conventions tables.
- Spell out abbreviations and acronyms at the first use in text and in the glossary. However, you may also want to expand abbreviations and acronyms at multiple points within a component to accommodate the user's nonsequential reading of information. As technology changes, the concept of *first use* loses meaning as users more frequently navigate information in a random way. In a hypermedia environment, for example, users may link to the middle of an online document or to a single online topic; the information team cannot know if this is the first time the user has seen the abbreviation or acronym.

- Use concrete language whenever possible, terms that have referents in the physical world. However, in describing concepts or qualities, you often have to use abstract words because of the abstract nature of the subject. Relate the abstraction to more concrete concepts that the user is probably familiar with. Use an illustration to let the user visualize the concept.
- Avoid catch-all phrases. Sometimes a term becomes so widely used that it no longer has any specific meaning. For example, the term *hypertext* originally meant the nonlinear navigation through a body of literature. The term has now come to be used as a vague way of talking about the future of information retrieval. If you must use a catch-all phrase, give it a specific meaning and consistently use that meaning.
- Avoid jargon. In its positive sense, **jargon** is the specialized vocabulary for a particular profession or industry. However, using jargon becomes a problem when all the members of the audience may not know a term or when the meaning is vague. Determining when jargon is understandable and when it is not is subjective. For example, the terms *hardware* and *software* are widely used and understood in the computer industry, but the terms *vaporware* and *shelfware* are not. The latter two terms are called jargon in the negative sense. Be aware of your audience's level of knowledge. If you are uncertain about a term, look at how it is used in trade journals, advertisements, competitive materials, and so on.

9.2 Translation and Terminology

Dealing with inconsistencies in terminology is one of the more time-consuming tasks for translators. They must search for subtle differences in meaning that justify using two or more words for seemingly the same concept or pick one word for each concept.

Developing International User Information provides details about using terminology to make translation easier. Use the following general guidelines:

- Do not create terms that allude to obscure cultural references. Translators are trained to change examples that are obviously culture specific but they may not recognize indirect references to culture-specific items or concepts. For example, the term *blue-ribbon panel* is clear only to those who know that a blue ribbon is sometimes used to designate the best or first in a class. That type of demarcation is culture specific.
- Even if a project is not being translated until the files are stable, make a copy of the glossary available to the translation team as early as possible.

- Remember that even if information is not translated, it will likely be used by nonnative speakers of English. Use clear, direct language, and avoid culture-specific terms and definitions.

9.3 Developing Style Sheets and Word Lists

Most groups follow a specific set of style guidelines:

- The guidelines may be specific to the company or organization (defining what is known as a **house style**). For example, Digital uses *The Digital Style Guide* as its primary style reference, the resource that defines the Digital house style.
- Whether or not the organization has a defined house style, it may also follow standard style reference works, such as *The Chicago Manual of Style*, *Words into Type*, or the *U.S. Government Printing Office Style Manual*.
- In addition, a project may need to follow certain government or other formal standards that further define style guidelines. For example, ISO standards can affect how the information presents units of measurement.

However, even the most comprehensive style references cannot cover all the elements of style that come up in an information project, and there are times when the information team agrees that the specific material needs a different type of treatment. In these cases, the project editor creates a style sheet or word list to control the consistency within an information set.

9.3.1 Style Sheets

A **style sheet** is a list of project-specific rules that supplement the rules that define house style. A style sheet usually covers the following types of information:

- Spelling, capitalization, and punctuation of specific words and phrases
- Abbreviations and acronyms
- Bibliographic conventions
- Footnote information
- Numbers
- Symbols
- Trademarks and service marks
- Typographic conventions

The project editor may also include reminders about certain elements of the house style; this provides an easy reference during the editorial review. For example, the editor may note the use of boldface type for terms that are defined in the text or write in a sample bibliography entry. See *The Digital Style Guide* for details on documentation conventions.

Example 9–1 shows part of a sample style sheet. The editor usually divides a sheet of paper (or a file) into units for each letter of the alphabet and for other categories of information.

During the review of a component, the editor notes on the style sheet any special spelling, hyphenation, and so on. The editor may also note the location of the first occurrence of the term and of discrepancies. (The location may be the section or page number. However, page numbers and section numbers may change as a draft is revised.)

The style sheet is a tool not only for editors. Editors supply the writers with copies of the style sheet so that the writers can build consistency into the files as they write. If the production group does a proofreading check during production, then the proofreader also uses the style sheet. Furthermore, when the project is over, the editor keeps the style sheet as a reference for the next version of the project.

Example 9–1 Sample Style Sheet

LM	NO	PQ
language sensitive Adj 3-2 language-sensitive PA 1-4 Local Area Terminal 2-8 mailbox 1-3	non-file-structured 8-11	

RS	TU	VW
random-access memory 1-10 shut down V 2-4 shutdown N,Adj 2-1, 3-2	tie wrap N 6-13	wide area network 2-3

XYZ	Numbers	Symbols
zeros N pl	10 000 10 eleven	< left angle bracket [left bracket

9.3.2 Word Lists

A **word list**, as its name implies, is a list of abbreviations, acronyms, and terms in alphabetical order. A word list gives the accepted spelling for all technical terms and may also include the spelling of common terms that are frequently misspelled or misused. Word lists may also contain brief notes about usage. For example:

active insertion point -- Do not use the term *current insertion point*.

active window

A/D (analog-to-digital)

adapter -- Do not use the term *adaptor*.

A word list generally applies to more than one product. Editors compile the word list from the style sheets for the individual products and circulate them to the writers and others who need the information.

See *The Digital Style Guide*, which contains the Digital word list.

9.4 Developing Glossaries

Glossaries are another means of ensuring consistency in terminology. Glossaries present terms and their definitions. There are two types of glossaries, differing in their intended audiences:

- **Project glossaries** are internal glossaries that help writers, editors, technical experts, and other team members use terms consistently as products are developed.
- **Customer glossaries** are glossaries released with an information component or information set. They help the customers understand how terms are used in the context of the particular product. Customer glossaries usually evolve from project glossaries.

Other differences between a project glossary and a customer glossary include:

	Project Glossary	Customer Glossary
Development stage	Development begins during the project planning stages, using the functional specification and other technical research as a base. The project glossary evolves over the life of the project.	Usually developed more towards the end of a project, when the information is fairly stable.
Scope	May cover multiple products, an entire environment (such as computer-aided engineering), or a vertical industry, such as financial software.	Usually limited to the terms used in a product, whether the glossary is a separate component in the set or part of a component.
Level of expertise	Provides definition of terms in context.	Discusses how a term is used, both incorrect usage and correct usage.

For example, the following definitions show how the terms *handle* and *select* were defined in a project glossary and a customer glossary:

	Project Glossary	Customer Glossary
handle	A symbol on the border of an object that appears when that object is selected for operations such as moving, sizing, copying, or deleting.	A rectangular symbol on the border of an overlay object that appears when that object is selected for operation such as moving, sizing, copying, or cutting.
select	To designate information, either text or graphics, that will be the object of a subsequent operation.	To designate information, either in text or graphics, that will be the object of a subsequent operation. You can select objects, such as overlays of a chart or data in a worksheet, by clicking on the objects or data.

The following sections discuss:

- Selecting and ordering glossary entries (Section 9.4.1)
- Writing glossary definitions (Section 9.4.2)
- Using cross-references in glossaries (Section 9.4.3)

See *The Digital Style Guide* for details on the placement and format of customer glossaries.

9.4.1 Selecting and Ordering Entries

Use the following guidelines when selecting and ordering glossary entries:

- Select terms (either single- or multiword) that are new to the intended audience or familiar terms that have new meanings.
- Include all acronyms used in the text. (However, if an acronym is a trademark, do not expand the acronym. See *The Digital Style Guide* for more information on trademarks.)
- Do not include procedures such as *mount a disk* or *allocate a drive.* Instead, define the individual terms (such as *allocate* and *drive*) in the glossary, and place the procedural topic in the index.
- Make sure that your definitions are technically accurate and usable by circulating the glossary for review among the technical, editorial, and usability reviewers. (See Section 6.6 for further information on what these types of reviewers look for.)
- Use the same method of alphabetizing in both the glossary and the index, either letter-by-letter or word-by-word. (See *The Digital Style Guide* for a discussion of the methods.) Digital prefers letter-by-letter alphabetizing.

9.4.2 Defining Glossary Entries

A glossary entry consists of a term and its definition. The definition consists of:

- A phrase describing the term and explaining how it is used. End this phrase with a period.
- An optional sentence or sentences further clarifying the material.

For example:

```
distribution list
A file that contains a list of user names. You use a distribution list
to automatically address a message to each user name in the file.
```

Use the following guidelines in creating and formatting glossary entries:

- Capitalize glossary terms the same way in the text and in the glossary.

For example:

Text:

The **domain** associates a data file with a record definition. Use the **Application Design Tool** to. . . .

Glossary:

Application Design Tool
A querying device that helps. . . .

domain
A data structure. . . .

- Present all definitions in parallel grammatical form. Use a phrase beginning with *A*, *An*, or *The* to begin the definition of a singular noun or verb. For example:

  application
  A set of procedures that performs a task or function.

  logging in
  The identification of a user to the operating system.

  When you define an adjective, begin the definition with a phrase like *Pertaining to*. For example:

  synchronous
  Pertaining to related events in which all changes occur simultaneously.

- Define acronyms and abbreviations either with the shortened form or the spelled-out term, depending on which form is more commonly known and used. Use a cross-reference to the other form. For example:

  UAF
  User authorization file. A file containing an entry for every user that the system manager authorizes to gain access to the system.

  user authorization file (UAF)
  See UAF.

- Use only the most common acronyms in the definition of a term, for example, *CPU* and *I/O*. If you have doubts about whether the acronym is known, do not use it to define another term.

- Do not define a term by using that word or a variation of it in a definition.

  Use

  screen width
  The number of character positions that can be displayed on a line.

  Do not use

  screen width
  The width of a line on the screen.

- Provide a frame of reference for the term. A definition must be able to stand on its own and inform the reader of the context.

  Use

  intensify
  To increase the level of brightness of all or part of a screen display.

  Do not use

  intensify
  To increase the level of brightness.

- If two or more terms are synonomous, place the definition with the more frequently used term. Mention the less frequently used term after the definition. For example:

  captive account
  A type of account that limits the activity of the user. Also known as a *turnkey account*.

  Also include the less frequently used term in the glossary. In place of a definition, add a cross-reference to the more commonly used term. For example:

  turnkey account
  See captive account.

  Or:

  turnkey account
  Same as captive account.

- Define meaning rather than action. Do not confuse a definition with the process used to create the object being defined. For example:

  style sheet
  A list that the project editor creates in reviewing a component or information set.

In this example, the meaning of the word is restricted to who creates the item and when it is created. If someone other than the project editor creates the style sheet, is it still a style sheet? Furthermore, while the definition places the term in a category (*list*), it does not explain how a style sheet differs from any other type of list.

In contrast, the following definition defines the general category in which the term belongs and differentiates the term from other items in the category:

style sheet
A list of rules on spelling, capitalization, conventions, and so on that provides a project-specific supplement to the rules that define house style.

- If a term has multiple definitions, separate the definitions with a semicolon if the definitions are close in meaning. For example:

  node
  An end-point of a branch in a network; a computer system in a network.

  If the definitions are not closely related, number each definition. For example:

  source
  (1) The point of entry of data in a network. (2) A data terminal installation that enters data into a connected channel.

9.4.3 Using Cross-References

Use the following guidelines for cross-references in glossary definitions:

- If you can control the format of glossary entries, typographically distinguish cross-referenced terms from the cross-references themselves. Use italic type for the cross-references (*See*, *See also*, and so on) and either boldface type or the regular text type for the cross-referenced term.

  Use

  See also real-time processing.

  Or

  See also **real-time processing.**

  Do not use

  See also real-time processing.

  However, if the cross-referenced term is in italics, use the regular text type for the cross-reference. For example:

  See also *The Chicago Manual of Style*.

To avoid a proliferation of typeface changes, use boldface type only in explicit cross-references. Do not use boldface type for glossary terms that are used in the definitions of other glossary terms. For example:

Use

auto-selection
An operation in which users select an object by moving the location cursor to that object using the navigation keys; no further action is needed to select that object.

See also **location cursor, navigation key, navigation key, selection.**

Do not use

auto-selection
An operation in which users **select** an **object** by moving the **location cursor** to that object using the **navigation keys**; no further action is needed to select that object.

See also **location cursor, navigation key, selection.**

- Use *See* to refer to a synonomous term:

  folio
  See page number.

- Use *See also* to refer to a related term:

  timesharing
  A method of allocating computer time in which each process gets an equal amount of time in turn. *See also* real-time processing.

  You can use the phrase *Compare with* instead of *See also*.

- Use *Contrast with* to refer to a term that is opposite or different, yet related, in meaning to the term defined. Note the use of the italics.

  input
  Information that is introduced into a program for use in processing. *Contrast with* output.

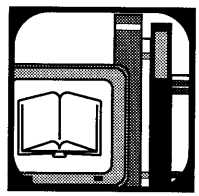
- A cross-reference must always point to an existing definition. In addition, make sure that a cross-referencing loop is not incomplete. In the following example, the user is led in a circular path of cross-references and never sees a definition:

  pure code
  See reentrant code.

  reentrant code
  See code.

  code
  See pure code, reentrant code.

10 Indexing



The purpose of an index is to give users quick random access to the information they need. As such, the index is one of the primary means of finding the information in a component, and the success of the index is a major factor in how well the component meets the goal of accessibility.

Some people using the index are familiar with the component and use the index to retrieve information. Other users have little or no familiarity with the component and use the index to find information and make connections between topics and objects. However, neither set of users wants to browse through the index: they want information, and they want it quickly.

The task of the indexer is to provide a complete, accurate, and balanced index that meets the needs of both audiences.

This chapter discusses:

- Characteristics of a good index (Section 10.1)
- Parts of an index entry (Section 10.2)
- Steps in the indexing process (Section 10.3)
- Guidelines for creating index entries (Section 10.3.3)
- Guidelines for creating master indexes (Section 10.4)
- Editing indexes (Section 10.5)

10.1 Characteristics of a Good Index

A useful index gives the user multiple points of entry to the subject matter and a balanced view of it:

- **Points of entry** are the topic headings the indexer creates for a given statement in the information component. The indexer helps users by anticipating the topic headings users are likely to look for.

To generate multiple entry points, you can include synonyms for topics and make logical permutations of entries. For example:

```
Indexes, abbreviations in

Abbreviations, in indexes
```

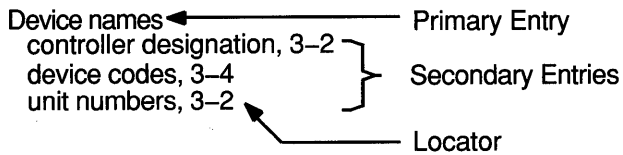
- An index is balanced when the entries reflect the emphasis given to topics in the information components. Thus, the indexer must understand the information well enough to know what the main topics are, how they relate to each other, and how much emphasis each topic receives.

10.2 Parts of an Index Entry

An index entry has the following parts:

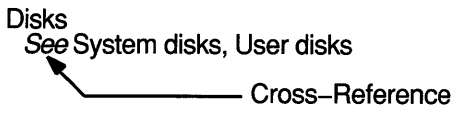
- A **primary entry**, which indicates the topic
- A **secondary entry**, which specifies or clarifies a particular aspect of the topic
- A **locator**, which indicates where to find the information

For example:



You may decide to highlight different components of the index entries to make the information more accessible. For example, you may use boldface type to indicate the location of the primary discussion of a topic, or you may use the suffix *t* after a page number to indicate that the information is found in the table on that page. If you establish such conventions, include a key at the beginning of the index, and use the conventions consistently. However, do not introduce such conventions unless you can use them consistently; the inconsistency will confuse users rather than help them.

Index entries may also contain cross-references that direct users to the right topic or closely related topics. For example:



There are two types of cross-references:

- ***See***

  Directs the user from one topic to the term where the index entries are listed. *See* references must always point from a synonym to the term used in the component. For example:

  ```
  Text editors
   See EDT Editor
  ```

- ***See also***

  Directs the user to a closely related topic or another aspect of the same topic. For example:

  ```
  EDT Editor, 3-1
   See also Line mode
  ```

10.3 Steps in the Indexing Process

Creating and polishing an index is painstaking work, requiring you to focus both on small details and on the broad structure of the material. You must create, analyze, and refine the entries themselves and determine how the index works as a whole.

Although some writers leave indexing until the end of the project, it is generally more efficient to develop the index entries as the material develops. However, if you must leave the indexing until the end of the project, be sure to schedule adequate time to develop and revise the index.

In your first draft of the index, do not worry about having too many entries or redundant entries. It is much easier to delete and consolidate entries at the end than to create them at the end.

Your goal is to provide a thorough means of accessing the topics in the user information, and, in developing the index, it is better to err on the side of a generous index than a sparse index. The size of index depends on the type and complexity of the material, not on page count. For example, a reference manual may have a shorter index than does a conceptual guide because the reference manual consists largely of terms, such as commands, options, and

keywords. A conceptual guide, on the other hand, has not only technical terms but also concepts and procedures. However, if a language is complex, the language reference manual may have a more extensive index than a particular task-oriented book that describes only a subset of the tasks associated with the product.

This section discusses the steps in creating an index:

- Creating an authority list (Section 10.3.1)
- Analyzing the text (Section 10.3.2)
- Selecting primary index entries (Section 10.3.3.1)
- Selecting secondary index entries (Section 10.3.3.2)
- Using cross-references (Section 10.3.3.3)

10.3.1 Creating an Authority List

An authority list is a technique you may use to ensure the consistency of index entries. An **authority list** is a record of the correct form of potential index entries, noting, for example, which terms are capitalized, which terms are plural, and which terms are preferred (cross-references). Consistency is important in index entries because it increases users' efficiency in using the index. The authority list is the means of ensuring consistency.

Use the following steps to create the authority list. Much of the information for the authority list is already available from the style sheet and word lists the editor developed (see Section 9.3) and from the list of tasks developed during the information design stage (see Section 4.2 and Section 4.6.1).

If possible, create an online file for the authority list. You can then use your system's software to sort the entries alphabetically. In addition, you can easily add new topics and generate an updated authority list at any time.

1. Begin by listing all the tasks discussed in the component. Include the terms associated with each task. For example, the task of creating an

index with a particular publishing system would begin this way:

```
Indexes, stages of processing
Indexes, how to process
Index entries, sorting
Index entries, merging
Index entries, coding
Indexes, tags for
Indexes, changing format of
   .
   .
   .
```

2. Add any terms associated with the tasks, including the product components associated with the task. For example, the following list has explicit entries for the formatting tags and qualifiers associated with the software. Also include synonyms for terms.

   For example:

```
X tag
Y tag
INDEX qualifier
Page numbers <--synonym for locator
Page numbers, range of
Locators     <--synonym for page number
Cross-references
Headings, for index
INX files
   .
   .
   .
```

3. Include any other contexts in which the task might be performed. These other contexts may be useful cross-references. For example:

```
Indexes, See also Master Indexes
```

4. Include entries for the concepts contained in notes, cautions, or warnings. For example, if the text contains a note that online indexes do not contain page numbers, you might include the following entries in the authority list:

```
Page numbers, and online display
Online books, index, page numbers in
Indexes, online display
```

5. Continue this process for each task associated with the product. When you are finished, you have a list that looks something like this:

```
Indexes, stages of processing
Indexes, how to process
Indexes, online display
Indexes, See also Master Index
Index entries, sorting
Index entries, merging
Index entries, coding
Indexes, tags for
Indexes, changing format of
X tag
Y tag
INDEX qualifier
Page numbers
Page numbers, and online display
Locators
Cross-references
Headings, for index
INX files
Master indexes
Online books, index, page numbers in
```

6. Sort the list of topics to produce an alphabetical list.

Also see Section 10.3.3.1 for further details on what items to include in the index.

10.3.2 Analyzing the Text

Once you have the authority list, you can begin adding index entries to the information source files. However, you need to analyze the text as you create the entries. The information is not presented in units of equal size, nor is all of it equally important. There may be pertinent information in one clause in a sentence, in one short paragraph, or in three or four paragraphs. One section may have 20 entries and another only 2.

Using the authority list as a guide, consider the emphasis in the text. For example, suppose you need to index the following information:

```
The TYPE command displays a file at your terminal. To
display a file named TEST.DAT, enter the following
command string:

$ TYPE test.dat
This is the first line of a file created with the EDT™ editor.

While a file is being displayed, you can stop and
resume the upward movement, or scrolling, of the terminal
display by using Ctrl/S and Ctrl/Q.  To temporarily stop the
display from scrolling, press Ctrl/S; to continue the
scrolling, press Ctrl/Q.  (The No Scroll key on VT100 terminals
and the F1 key on VT200-series terminals perform the same
functions.  Pressing No Scroll once stops scrolling; pressing
it again resumes scrolling.)
```

You could create all these index entries for this section:

```
Files, displaying on terminal
TYPE command, example
Scrolling, defined
Scrolling, resuming
Scrolling, stopping
Ctrl/S, function of
Ctrl/Q, function of
No Scroll key, function of
F1 key, function of
```

You need to analyze the text to see which entries are significant to the section.

The information on the TYPE command is insignificant in this context; it does not tell users anything about the command except that they use the TYPE command for displaying files. If they know to look up the TYPE command in the index, leading them to this page gives them no useful information. At most, you might have an entry for:

```
Files, displaying with TYPE command
```

In addition, the information about the keys may not be pertinent to the discussion, particularly if the information appears in a table or appendix elsewhere in the component.

What you have left are four entries:

```
Files, displaying on terminal (or Files, displaying with TYPE command)
Scrolling, defined
Scrolling, resuming
Scrolling, stopping
```

If there is no other information about scrolling in the component, you may consolidate these entries when you edit the index. Either of the following entries is acceptable:

```
Scrolling, how to control
Scrolling
```

As you begin to enter index entries in your files, it is better to have too many entries than too few. You can always remove the superfluous entries, but it is more difficult to add entries at a later date. You cannot fill in gaps that you cannot see.

10.3.3 Creating Index Entries

This section lists the guidelines to follow when creating entries for your index:

- Creating primary entries (Section 10.3.3.1)
- Creating secondary entries (Section 10.3.3.2)
- Using cross-references (Section 10.3.3.3)

Use the same method of alphabetizing in both the index and the glossary, either letter-by-letter or word-by-word. See *The Digital Style Guide* for a discussion of the methods and for additional information on the format of index entries and the placement of the index in a component.

10.3.3.1 Creating Primary Entries

Use the following guidelines when creating primary entries:

- Always create primary entries for the following types of items:
  - Acronyms
  - Commands
  - Concepts
  - Examples
  - Figures
  - Options, qualifiers, switches, and keywords
  - Parameter names

- Procedures
- Routine names
- Standards such as IEEE or ANSI standards
- Tables
- Tasks
- Terms defined in the text
- Utilities

Note that the index entry for a table, figure, or example need only reflect the topic or concept that the item addresses. You do not have to use the term *table*, *figure*, or *example* in the index entry.

- Create a primary entry for each formal section title only if the section title directly applies to the discussion that follows.

  Sometimes, the section title does not accurately reflect the topic discussed in that section. Of course, this situation points out a defect in either the naming of the section or the way the section is written. However, if for some reason the title or the section text cannot be changed, base the primary index entry on the topic discussed, not the title.

- Do not create an entry for the subject of the component itself. For example, if you are indexing a book about system security, do not use the primary entry *Security* in the index. If the subject, *security*, needs an entire book written about it, a single primary index entry cannot adequately address the subject. Use categories of the book's main topics for the primary entries. For example:

```
Security auditing
   .
   .
   .
Security manager
   .
   .
   .
Security tasks
   .
   .
   .
```

- Do not index glossary entries unless the glossary is the only place where the terms are used. For example, users may be familiar with a certain term used by another computer vendor. Your company may use another term for the same concept but include a reference to the other vendor's term in the glossary. In this case, it is appropriate to index the other vendor's term with a cross-refernence to your company's term.
- Do not index individual error messages. Most information that discusses error messages includes an alphabetized list of the messages in an appendix. The user has easy access to the information through the table of contents and the alphabetical order of the material in the appendix. You can use a single primary entry that leads the user to the appendix. For example:

  ```
  Error messages
   See Appendix C for an alphabetic listing of all error messages
  ```

  If the component does not contain a listing of error messages and only one or two messages are discussed in the component, evaluate if the material is significant. If it is, then you may use an entry such as the following:

  ```
  Error messages
   %DBM-Access denied, 5-13
   %DBM-Not ready, 3-6
  ```

- In general, use only nouns, noun phrases, or gerunds as primary entries. For example:

  ```
  Networks
   bringing up nodes on, 6-5     Networks is object of prep. (noun)
   starting, 2-8                 Networks is object of verb (noun)
  ```

- Do not use adjectives or adverbs alone as primary entries. For example:

  Use

  ```
  Local area terminals, 2-3
  Local mode, 3-16
  ```

  Do not use

  ```
  Local
   area terminals, 2-3
   mode, 3-16
  ```

- Avoid using a primary entry as both a noun and an adjective at the same time, particularly if doing so breaks up a compound term commonly used

in the text. For example:

Use

```
Object-oriented code, 2-3, 2-7
Object protection, 9-14
Objects, defined, 2-1
```

Do not use

```
Object
 defined, 2-1
 oriented code, 2-3, 2-7
 protection, 9-14
```

In the following example, however, the term *network interface* is used only incidentally in the text, and the use of *network* as both an adjective and noun may be allowable.

```
Network
 bringing up nodes on, 6-5     Network is object of preposition (noun)
 interface, 6-3                Network is adjective modifying interface
 starting, 2-8                 Network is object of verb (noun)
```

- Avoid using verb phrases as primary entries. In most cases, index the verb under its object.

Use

```
User passwords, changing
```

Do not use

```
Change user password
Changing a user password
```

However, there may be standard tasks that users expect to be able to accomplish with the product. While some users read the table of contents to find the task, others may use the index as the main point of entry to the information. Therefore, you might index information at the task. For example:

```
Application databases
 building, 4-37
 defined, 2-3
 server procedures for, 3-12 to 3-17, A-2
Building
 See also individual entities to be built
 application databases, 4-37
 menu databases, 3-24
 request library files, 2-17
 task group databases, 4-32
```

- Do not split compound terms, terms that are consistently used to represent a concept in text.

  Use

  ```
  Disk protection, 3-14, 3-20
  Disk scavenging, 3-16
  ```

  Do not use

  ```
  Disk
   protection, 3-14, 3-20
   scavenging, 3-16
  ```

- Do not include two topics in one entry. Each topic should have its own primary entry.

  Use

  ```
  Primary passwords, 5-1

  Secondary passwords, 5-3
  ```

  Do not use

  ```
  Primary and secondary passwords, 5-1, 5-3
  ```

  If you want to show that the two topics are related, you can index them as follows:

  ```
  Primary passwords
   See also Secondary passwords
   assigning, 5-1

  Secondary passwords
   See also Primary passwords
   assigning, 5-3
  ```

- Avoid using more than one primary entry with multiple page numbers for the same topic. Place the page numbers with the term used in the text, and use a cross-reference to the synonyms for the entry.

  Use

  ```
  Flags
   See Qualifiers

  Options
   See Qualifiers

  Qualifiers, 8-1, 8-3, 9-10
  ```

Do not use

```
Flags, 8-1, 8-3, 9-10

Options, 8-1, 8-3, 9-10

Qualifiers, 8-1, 8-3, 9-10
```

The pages on which the information is found are listed in only one place in the index — with the entry *Qualifiers*. Besides reducing the number of duplicate page number references, this guideline ensures that the user knows what term to look for in the text when looking up the information (that is, *qualifiers* rather than *flags* or *options*).

If there is only one page number associated with a topic, you may include the page number with both the topic and the synonym. In this way, the user finds the information in one step rather than two steps. However, if the synonym is not common, the user may have difficulty finding the proper information in the text.

- Create synonym entries for all possible primary entries.

  For a given primary entry, the number of synonym entries you include in the index depends on how many ways you think the user might look up the topic. For example, if you have a primary entry *Qualifiers*, you might want to include two synonym entries, *Flags* and *Options*, to ensure that the user finds the information. Use cross-references from the synonyms to the primary entry. For example:

  ```
  Flags
   See Qualifiers

  Options
   See Qualifiers

  Qualifiers, 5-4, 5-5 to 5-10, 6-13
  ```

- Do not automatically index every occurrence of an often-used term. Evaluate each occurrence of the word and decide whether a page reference in the index is necessary. For example, you are indexing a book about text editing, and the word *cursor* is used many times. Index the significant information, such as changing the appearance of the cursor or the different ways to move the cursor. Do not index each passing reference to moving the cursor.

- For each entry that is a command, qualifier, parameter, or similar item, indicate the type of item in the index entry.

  For example, a certain term may be both a command and an option, depending on how it is used. Thus, to avoid confusion, modify the term with the correct item name.

  Use

  ```
  include command, 9-28
  include option, 10-13
  ```

  Do not use

  ```
  include
   command, 9-28
   option, 10-13
  ```

- If a symbol commonly precedes an item (such as a slash character before a qualifier name or a minus sign before an option), it is not necessary to include the symbol with the item. For example, *–include option* may be redundant. The word *option* sufficiently indicates that the term is an option.

- Use the complete form of commands, options, and so on. Do not use abbreviated forms.

  Use

  ```
  SET DEFAULT command
  ```

  Do not use

  ```
  SET DEF command
  ```

- Make primary entries as specific and descriptive as possible. Use a cross-reference at the general primary entry (such as *ACEs*) to refer the user to the more specific entry.

  Use

  ```
  ACEs
   See Image ACE, Protection ACE, Security alarm ACE

  Image ACE, 3-1, 3-5, 4-16

  Protection ACE, 3-2, 3-7, 4-17

  Security alarm ACE, 3-3, 3-5, 4-13
  ```

Do not use

```
ACEs
 image ACE, 3-1, 3-5, 4-16
 protection ACE, 3-2, 3-7, 4-17
 security alarm ACE, 3-3, 3-5, 4-13
```

It is best to assume that the user looks up a specific topic (such as *Protection ACE*) more often than a general one (such as *ACEs*). Therefore, creating entries that are as specific as possible prevents the reader from going through two entry levels to find information. As in the previous example, if the reader *does* look up the general topic *ACEs*, the index points to the more specific topics.

However, if there is only one page number associated with each specific topic, you may place the page numbers with both the general and specific topics. For example:

```
ACEs
 image ACE, 3-1
 protection ACE, 3-2
 security alarm ACE, 3-3
```

This reduces the number of steps the user takes to find the information.

- In general, index acronyms and abbreviations under the acronym or abbreviation. Provide a cross-reference at the full term. For example:

  Use

  ```
  Access control lists
   See ACLs

  ACLs, 4-1, 7-3
  ```

  Do not use

  ```
  Access control lists, 4-1, 7-3

  ACLs
   See Access control lists
  ```

  However, if the spelled-out form is more commonly used, index the spelled-out form and use a cross-reference at the acronym or abbreviation.

  If an acronym or abbreviation is used in both the index and the glossary, use the same form in both places. Do not use the shortened form as the main entry in the index and the spelled-out form as the main entry in the glossary.

- Use the plural form for primary entries except where using the plural is awkward or misleading. Consistently using the plural form makes index correlation and maintenance easier. For example, always using the plural form prevents the following error in your index:

```
Printer, 5-2

Printers, 5-2
 laser, 2-3, 5-4
 LQP, 5-3
```

  However, use the singular form when the plural is incorrect or imprecise. For example, some nouns are never used as plurals, such as an abstraction like the word *clarity*. In other cases, using the plural is misleading; if there is only one INDEX qualifier to be described, using *INDEX qualifiers* is clearly wrong.

- Unless a word is in all uppercase or is case sensitive, use an initial capital letter for the primary entry in the index. If a primary entry has more than one word, use an initial capital letter only for the first word unless the term is a proper noun. For example:

  Use

```
Distributed File System, 3-3   (proper noun)
Mail utility commands, 5-4
```

  Do not use

```
Distributed file system, 3-3    (proper noun)
Mail utility commands, 5-4
```

- Index symbols both as symbols, at the beginning of the index, and under the name of the symbol. For example:

```
& (ampersand), 3-9

A
Ambiguity, deleting, 1-6, 4-11
Ampersand (&), 3-9
Articles, 3-2
```

  If the text formatting tool cannot place symbols at the beginning of the index, index the symbols under their names.

- Place numeric primary entries before the alphabetic entries if the text-formatting tool allows it. For example, the primary entry *64-bit* should

go before any of the alphabetic entries, as follows:

```
64-bit, 5-12

A
Access control, 1-5
Application generators, 2-6, 2-9, 2-10
```

Put all numeric entries in ascending numeric order. For example:

```
070R disk, 1-1
32-bit, 1-1
64-bit, 1-2
```

If the formatting tool cannot place numeric entries before alphabetic entries, then treat the numeric entries as if the numbers were spelled out. For example:

Phrase	Alphabetize as:
070R disk	Zero seven zero R
32-bit	Thirty-two bit
1957 (the year)	Nineteen fifty-seven

10.3.3.2 Creating Secondary Entries

Use the following guidelines when creating secondary index entries:

- Use verbs, verb phrases, adjectives, nouns, or prepositional phrases.

  For example:

```
Terminals
 described, 2-2       (verb)
 in a network, 4-2    (prepositional phrase)
 remote, 3-3          (adjective)
 turning on, 2-3      (verb phrase)
 types, 2-1           (noun)
```

- If a primary entry has more than three page references, always create a secondary entry for each page reference. Otherwise, the user must look up each page to find the information. In contrast, the secondary entries tell the user immediately which page contains the needed information.

Note that *The Chicago Manual of Style* allows up to five page references without secondary entries. However, computer users look to the index for quick access to information for accomplishing a task. To accommodate that need, it is best to limit the number of page references to three.

Use

```
Terminals
 bit-mapped, 63
 described, 12, 35
 local, 23
 remote, 34
```

Do not use

```
Terminals, 12, 23, 34, 35, 63
```

- For similar or related primary entries, index the secondary entries in the same way. For example:

  Use

  ```
  QUOTE command          WRITE command
     described              described
     example                example
  ```

  Do not use

  ```
  QUOTE command          WRITE command
     described              discussed
     example                overview
                            use of
  ```

  Generally, if similar items are treated in the same way in the text, they should also be indexed in the same way. However, nonparallel construction, as in the previous example, may not always be the fault of the indexer. Instead, it may indicate a problem with the structure of the text.

- Use prepositions, articles, and conjunctions judiciously in secondary entries. Use them when they make the secondary entries easier to understand, but omit them when they do not add meaning to the entry.

  For example, using the preposition *of* in the secondary entry does nothing to enhance the meaning of the primary entry:

  Use

  ```
  Authorizing system use
     overview
  ```

  Do not use

  ```
  Authorizing system use
     overview of
  ```

In the following example, however, the preposition *to* clarifies the meaning of the primary entry:

Use

```
Data erasing
   to protect disks
```

Do not use

```
Data erasing
   protect disks
```

If the preposition were omitted, the user may assume that data erasing is something to protect disks *from*, instead of something to protect disks *with*.

- Do not put long lists of similar items under a primary entry. Instead, make each item a primary entry of its own.

  Use

  ```
  Batch mode, 6-1

  Dialup mode, 6-2

  Interactive mode, 6-2

  Login modes
   See also individual login type entries
   types, 6-1 to 6-3
  ```

  Do not use

  ```
  Login modes
     batch mode, 6-1
     dialup mode, 6-2
     interactive mode, 6-2
  ```

  The index is not the place to give the user technical information such as a list of which login modes are available. An index entry such as *Login mode* merely points the reader to the place in the text where the various login modes are identified.

- If a term has lowercase letters in text, do not capitalize the term in the secondary entry. For example:

  Use

  ```
  Variables, 3-4, 3-9
   hyphenating, 3-7
   italicizing, 3-4
  ```

Do not use

```
Variables, 3-4, 3-9
 Hyphenating, 3-7
 Italicizing, 3-4
```

- If a primary entry has only one secondary entry, combine the two into a primary entry. For example:

  Use

  ```
  Logarithmic scaling, 5-3
  Logins from remote terminals, 4-2
  Lookup values, 9-13
  ```

  Do not use

  ```
  Logarithmic scaling, 5-3
  Logins
     from remote terminals   4-2
  Lookup values, 9-13
  ```

- Limit the use of tertiary entries. In a few cases, tertiary index entries may be justified, but in most cases they are not necessary.

  Use

  ```
  Logins
   alternate command procedure, 2-20
   controlling number of dialup attempts, 11-9
   dialup, 11-8
   failures, counting for break-in detection, 11-10
  ```

  Do not use

  ```
  Logins
   alternate command procedure, 2-20
   dialup, 11-8
     controlling number of attempts, 11-9
   failures
     counting for break-in detection, 11-10
  ```

- If multiple secondary entries refer to the same hardcopy page, you may combine the entries into a single, more general secondary entry.

  Use

  ```
  Printers
     operating, 8-2
  ```

Do not use

```
Printers
   configuring, 8-2
   installing, 8-2
   maintaining, 8-2
```

However, in indexes for online books, such consolidation may not be useful. Indexes in online books do not include page numbers. Therefore the user does not necessarily know that all the references are to the same page. If the user is unfamiliar with the material, a consolidated secondary entry may not give enough information to signal that the user has found the correct index entry.

10.3.3.3 Using Cross-References

Cross-references are important for two reasons:

- Using *See* entries helps you to avoid indexing the same topic and its page numbers under many primary entries. This reduces the size of your overall index and ensures that it is as concise as possible.
- Using *See also* entries ensures that the user can access information on related topics.

Use the following general guidelines when using index cross-references:

- Index cross-references do not have any page numbers associated with them. For example:

  Use

  ```
  Security problems, 1-2
   See also Networks
  ```

  Do not use

  ```
  Security problems, 1-2
   See also Networks, 3-6
  ```

- Make sure that a cross-reference loop is not circular and that it points to an actual primary entry. For example:

  Use

  ```
  Terminals
   See Peripherals

  Peripherals, 1-5
  ```

Do not use

```
Terminals
 See Peripherals

Peripherals
 See Printers, Tape drives, Terminals
```

- Italicize the words *See* and *See also* in index cross-references. Do not italicize the cross-referenced terms.

  Use

  ```
  File protection
    See Object protection
  ```

  Do not use

  ```
  File protection
   See Object Protection

  File protection
   See Object Protection
  ```

  However, if the cross-referenced term is already in italics, use the regular typeface for the cross-reference. For example:

  Use

  ```
  Choose, 2-20
   See also Enter
  ```

  Do not use

  ```
  Choose, 2-20
   See also Enter
  ```

Use the following guidelines when using *See* cross-references:

- Use a *See* cross-reference only when the primary entry has no secondary entries. For example:

  Use

  ```
  Printers
   configuring, 4-1
   installing,  4-2
   monitoring, 4-3

  Printing devices
   See Printers
  ```

Do not use

```
Printers, 4-1 to 4-3

Printing devices
 See Printers
 configuring,  4-1
 installing, 4-2
 monitoring, 4-3
```

- Use a *See* cross-reference to point from one primary entry to a preferred primary entry.

  Use

```
Alarm ACE
 See Security alarm ACE

Security alarm ACE, 6-3
```

  Do not use

```
Alarm ACE, 6-3

Security alarm ACE, 6-3
```

- Use a *See* cross-reference to point from a general primary entry to a more specific primary entry or entries.

  Use

```
Backup Utility,   4-4, 7-2

Error Logging Utility, 8-4

Mount Utility, 9-5

Utilities
 See Backup Utility
 See Error Logging Utility
 See Mount Utility
```

  Do not use

```
Utilities
   Backup Utility,   4-4, 7-2
   Error Logging Utility,  8-4
   Mount Utility,  9-5
```

- You may use up to three *See* cross-references for one primary entry. For example:

```
ACEs
   See Image ACE, Protection ACE, Security Alarm ACE
```

However, if there are more than three cross-references, it is better to handle the entries with a *See also* cross-reference. For example:

Use

```
ACEs
 See also specific ACE types
 types, 6-1 to 6-3

Identifier ACE, 6-3, 6-10 to 6-12

Image ACE, 6-1, 6-5

Protection ACE, 6-2, 6-7

Security Alarm ACE, 6-2, 6-9
   .
   .
   .
```

Do not use

```
ACEs
 See Identifier ACE, Image ACE, Protection ACE,
   Security Alarm ACE
```

Use the following guidelines when using *See also* cross-references:

- Use a *See also* cross-reference to point from one primary entry to another primary entry containing related information.

  For example:

  ```
  Security problems
   See also Networks
   categories, 1-2
   identifying, 3-9
  ```

- Do not use a *See also* cross-reference if the related information to which the cross-reference points is already mentioned in the the original entry.

  For example, a discussion of printers extends over two pages, and related information about paper appears on the second page of the printers discussion. In this case, you do not need to refer to the related information on paper because the user sees the information on paper while reading the discussion on printers.

  Use

  ```
  Paper, 3-3

  Printers,  3-2 to 3-3
  ```

Do not use

Paper, 3-3

Printers, 3-2 to 3-3
See also Paper

10.4 Master Indexes

Information sets often include a **master index**, an index that points to topics across an information set. Index entries contain the title of the book to which they belong as well as the page number within the book. The titles are usually abbreviations of the complete titles; a key to the titles precedes the master index. For example:

Master Index

Key to Book Titles:

APPDEV Introduction to Application Development
DBINTR Introduction to DECproduct
DBGDMP Guide to Database Management and Performance
DBGDD Guide to Database Design and Definition

.
.
.

A

Application design
  data design, *APPDEV* 2-6 to 2-9, *DBINTR* 2-3, *DBGDD* 3-9 to 3-15
  performance, *APPDEV* 6-18, *DBINTR* 6-18, *DBGDMP*, 7-3 to 7-14
Areas
  adding pages, *DBGDMP* 5-6
  enlarging CALC range, *DBGDMP* 5-10
  size, *DBGDD* 3-11, *DBGDMP* 5-5

.
.
.

You generally use the same process and principles in creating a master index as for a single-book index. However, the following guidelines are particularly important in developing master indexes:

- As a team, decide on the title abbreviations to be used in the master index and how you will define those for the users.
- Use consistent spelling and capitalization for all index entries throughout the information set. Otherwise, the master index has a different entry for each variant form.

- Establish consistent terminology to be used across all index entries. For example, avoid the following type of inconsistency:

```
Areas
  defined, DBGDMP 5-1
  definition, DBGDD, 3-3
```

- Establish conventions for adding qualifying words to primary entries to avoid ambiguous entries and duplicate entries. For example:

  Use

```
DELETE command

DELETE routine
```

  Do not use

```
DELETE    ==> Ambiguous entry. Is this the same as the Delete command?
              If not, what does this entry refer to?
DELETE command
```

  Establishing such conventions is particularly important for:

  - Commands
  - Data types
  - Protocols
  - Routines
  - Scripts
  - Services
  - Utilities

- Use the plural form for primary entries, except where the plural is awkward or misleading. Discuss exceptions among the team so that entries are consistent across all the components.
- As a team, decide on the major topics in the information set and which topics will be treated as primary entries in the master index. Consolidate other topics as secondary entries under the primary entries. For example, include important terms used throughout the information set as primary entries. Make related but less frequently used terms into secondary entries. If you must use related terms as primary entries, include *See also* cross-references under both the major topic and the related terms. In the following example, the term *Client/server communications* is a major topic in the information set, but the concept of server pools is also important and has its own primary entry. The master index uses *See also* cross-references

at both entries. The master index directs users who look up either *Clients* or *Server instances* to the main topic of *Client/server communications*.

```
Clients
  See Client/server communications

Client/server communications
  See also Server pool
  Clients, APG 2-3, APG 2-13, APR 1-10
  Server instances, APG 4-5, APR 3-15, APR 3-23
    .
    .
    .
Server instances
  See Client/server communications
    .
    .
    .
Server pool
  See also Client/server communications
    .
    .
    .
```

- As a team, decide whether to index arguments, options, parameters, and so on in the master index. The size and complexity of the product may influence your group's practice.
- Include *See* and *See also* cross-references in all single-book indexes where they apply. Otherwise, the master index will contain the correct cross-references, but the single-book indexes will be incomplete.

10.5 Editing an Index

Editing an index is the process of shaping individual entries into a coherent whole. You delete, consolidate, and correlate the draft index entries.

If you have done a thorough job of identifying pertinent information, selecting appropriate index entries, and maintaining a reasonable degree of consistency, the editing process should be relatively painless. If you have not, the editing process establishes consistency in your index entries but might not produce a useful index.

Begin by reviewing the most significant topics for the material, which generally have many secondary entries. The edits you make to these entries affect the rest of the index entries. After revising the significant topics, edit the other entries, starting at the beginning of the alphabet and working through to the end.

Use the following guidelines when editing each topic and the overall index:

- Do all entries merge properly? You may need to correct capitalization or change a singular form to a plural form.
- Do the primary and secondary entries make sense in the context of the index? Will the user be able to work back from the index entry to the proper section in the text?
- Are all possible synonyms covered? Have all entries been permuted that could be permuted? Some permutations will not make sense or be that helpful, so use your judgment.
- Are the page numbers for permuted entries the same?
- Can some secondary entries be consolidated? If more than half the secondary entries for one primary entry come from one page or the same two or three pages, consider combining or omitting some of them.
- Are there redundant secondary entries? Some duplicate secondary entries are helpful if they are not next to each other and there are at least six other secondary entries. However, duplicate entries that are the result of slightly different wording (*creating* and *creation of*, for example) are not helpful.
- Do some of the secondary entries need to be reworded because of the way they are alphabetized? Occasionally, prepositions, conjunctions, and the like that improve the sense of the secondary entry affect the alphabetic order. You may need to reword the secondary entry so that the key words in the secondary entry are first, not the preposition or conjunction. For example, you may need to make the following type of change:

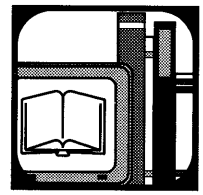
```
Vertical lists                  Vertical lists
 with em dashes, 2-79    ===>    em dashes with, 2-79
 with periods, 2-78              periods with, 2-78
```

- Is there sufficient cross-referencing?

  Do the cross-references exist? Do not direct the user to a topic that does not appear in the index.

  Are the *See also* cross-references meaningful? If there are only one or two page references at the cross-referenced entry, the cross-reference may not be that useful.

11
Online Information



Online information is any information in text or graphic form that users can display on their workstation or terminal screens. Online information can take several forms:

- Context-sensitive information built into the user interface
- Different types of reference material
- Training modules and computer-based instruction
- Books

Online information gives users quick and efficient access to a library of technical information right at their desks. In addition, online information eliminates the need for large amounts of storage space for hardcopy documents. Thousands of pages can be stored on disk or CD–ROM.

This chapter discusses the following forms of online information that are currently available to Digital customers. These types of information are the most common forms of online information supplied to customers, though they are not the only types. (For example, customers may access their own DDIF and POSTSCRIPT files using the CDA™ Viewer. In some cases, they can access the product installation guides from the software CD–ROM.)

- Online books (using the DECwindows Bookreader application) (Section 11.1)
- Online help (Section 11.2)
  - DECwindows XUI™ Help (Section 11.2.1)
  - DECwindows Motif® Help (Section 11.2.2)
  - OpenVMS Help (Section 11.2.3)
  - Reference pages (manpages) for systems based on the UNIX® operating system (Section 11.2.4)

Section 11.3 briefly discusses hypermedia technology.

11.1 Online Books

Books may be available in both hardcopy and online form or online form only. **Online books** are stored on a CD–ROM and viewed on a workstation or terminal. Online books are accessible to multiple users simultaneously, as long as they have the appropriate display device. This availability eliminates the problem of multiple users needing multiple copies of the same book.

See Section 6.10.1 and Section A.3 for information on reviewing the quality of online books.

11.1.1 Bookreader Features

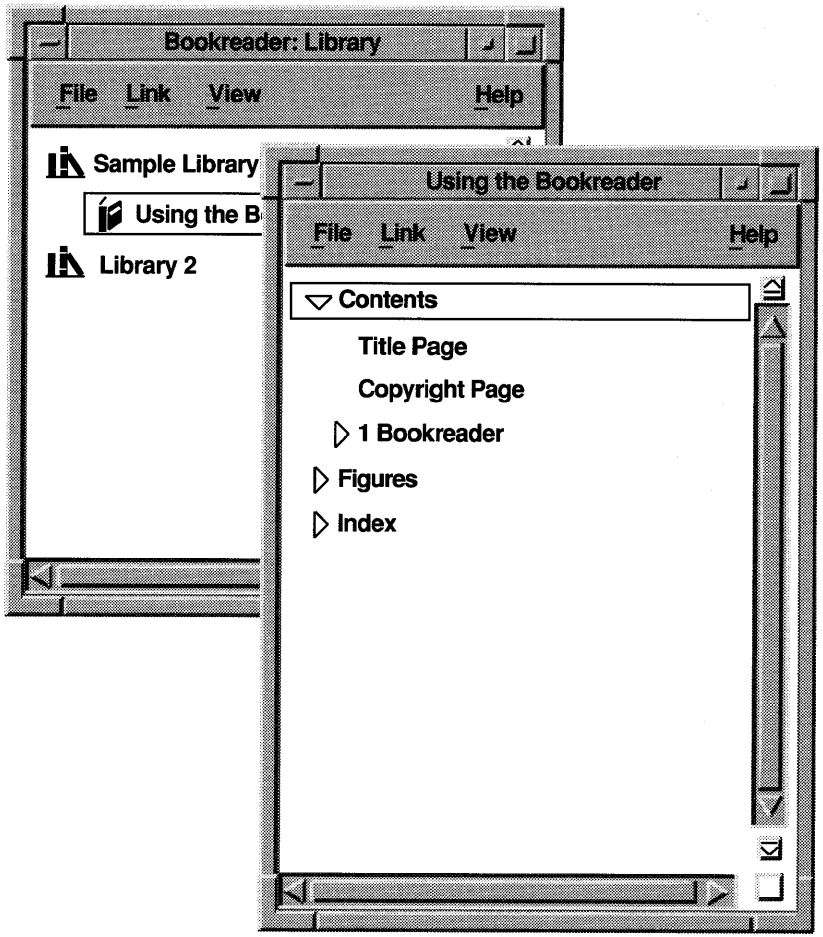
The Bookreader application is one model that gives users access to the online versions of books. Using the DECwindows graphical user interface, users browse through the book's table of contents and index and click on specific topics. The Bookreader application displays the information in another window. Users can also activate *hotspots* within the book to call up other related information. (See Section 11.1.2.2 for more information on hotspots.)

Some of the features of Bookreader include:

- Ability to display multiple windows and books
- Integrated text and graphics
- Scroll bars for scanning text
- Automated cross-referencing within a book
- Customizable library of books and bookshelves
- Online help

Figure 11–1 shows a sample Bookreader display.

Figure 11–1 Sample Bookreader Display



11.1.2 Bookreader Concepts

Although an online book generally contains the same information as its hardcopy equivalent, there are some concepts specific to Bookreader that may affect the conventions you use in creating your source files. No matter what authoring tool you use, your book must have a table of contents and an index for Bookreader; otherwise, the user must go through the book topic by topic. See Section B.9.2 for further information on formatting books for Bookreader.

The following sections describe:

- Information chunks and topics (Section 11.1.2.1)
- Hotspots (Section 11.1.2.2)
- Pop-up windows (Section 11.1.2.3)

11.1.2.1 Information Chunks and Topics

A **chunk** of online information is the smallest unit of information that Bookreader can access from the table of contents, the index, or other sections that refer to them. A **topic** consists of one or more information chunks displayed on successive screens. Topics appear in the table of contents.

Bookreader cannot go directly to a line in a paragraph from an index entry or cross-reference. Instead, Bookreader accesses the whole chunk that the user references. If the chunk of information that the user selects is larger than the text window, the user must use the vertical scroll bar to read all the text. Therefore, information is more accessible if you create smaller online chunks and topics to fit onto the screen.

In general, a topic should not be shorter than one quarter of a screen nor longer than five screens. Also consider that text may expand up to 25 percent when it is translated. Therefore, a topic that is of suitable length in the original may be too long after translation.

The concept of optimal online topic size is closely related to the concept of modular information. See Section 4.1 for more information on modularity.

Typically, chunks of information include:

- Chapters
- Sections
- Formal figures, tables, and examples
- Template sections and subsections
- Footnotes, glossary terms, and messages
- Paragraphs and lists
- Definition list items
- Copyright page elements
- Title page elements

Depending on the authoring tool you use, you can control the size of online chunks and topics. See Section B.9.2 for more information.

11.1.2.2 Hotspots

A **hotspot** is a region within the window that the user activates with the mouse to display cross-referenced material. For example, if the user clicks on a reference to a figure, the figure is displayed in a separate window, known as a *pop-up window*. (See Section 11.1.2.3 for more information on pop-up windows.)

Cross-references to other sections of text are also hotspots, except that the referenced topic replaces the current text in the window. For example, if the user clicks on a cross-reference to another chapter or section, that topic replaces the current material in the topic window. (Users may be able to control whether a new topic replaces the current topic or is displayed in another window.)

Hotspots are easily distinguished by the box around them:

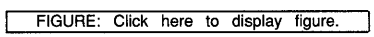
```
See [Figure 1-1] for an example of the main menu screen.
```

Users can control whether the box is always visible or visible only when they move the mouse over the hotspot.

11.1.2.3 Pop-Up Windows

A **pop-up window** displays referenced material, usually a formal figure, table, or example. The pop-up window is sized to fit the material it contains; it overlays any text that is currently on the screen. The user displays the pop-up window by using the mouse pointer to activate a hotspot in the online text or by clicking on a formal table, figure, or example in the table of contents.

Bookreader puts all formal tables, formal examples, formal figures, and footnotes in pop-up windows. All informal tables, examples, and figures appear in the main body of the text; they do not have captions or symbolic names, and they do not appear in the table of contents. Depending on the authoring tool you use, you can format your file to put that information in a pop-up window. For example, you might put an informal example in a pop-up window if it is long or wider than 33 picas. The user clicks on the hotspot to see the pop-up window for the informal example.



Do not use a pop-up window for an informal table, figure, or example if it fits easily in the topic window. See Section B.9.2 for information on using the VAX DOCUMENT authoring tool to control the information that appears in pop-up windows.

11.1.3 Indexing Online Books

The table of contents and the index are the users' primary tools for finding information in and navigating through online books. Therefore, the completeness, accuracy, consistency, and balance of the index are crucial to the users' ability to access the online information. Section 10.3 contains general guidelines for creating any index, no matter what the output media.

In addition, for online books you must:

- Place index entries after the section titles; that is, make sure the index entry is embedded within the appropriate section, not before placed before it.
- Make sure that each primary entry in the index has a hotspot around it unless the entry also has secondary entries.

11.2 Online Help

Digital currently uses four major online help technologies:

- DECwindows XUI Help (Section 11.2.1)
- DECwindows Motif Help (Section 11.2.2)
- OpenVMS Help screens (also known as DCL Help) (Section 11.2.3)
- Reference pages for systems based on the UNIX operating system (Section 11.2.4)

Each type of help provides the user with online information about specific tasks, applications, commands, fields, or objects on the screen.

For whichever type of help you create, use the following general guidelines:

- Make the text brief. If possible, fit a topic within the application's default help screen so that users do not have to use excessive scrolling.
- Use simple, direct language.
- Avoid an overly friendly or telegraphic writing style.
- Give sufficient information so that users can perform the task.
- Create a visual format that is easy to read. For example, break long paragraphs into several shorter ones.
- Reduce text density by using blank lines to separate paragraphs and list items.

11.2.1 DECwindows XUI Help

DECwindows applications provide online help that describes application tasks, supplements the information available in the books (hardcopy or online), and summarizes the information available in the books.

Some applications also provide context-sensitive help. In these instances, DECwindows displays help that is relevant to the objects on the user's screen. It is recommended that applications give context-sensitive help for:

- Menus
- Menu items
- Dialog boxes (and each component of a dialog box)
- Other objects, such as buttons

The source files for DECwindows help screens are ASCII files. Because the DECwindows help libraries are hierarchical, you use key numbers to indicate the level in the hierarchy. For example, the help describing the File menu might be structured as follows:

```
1 Menus
 [text describing menus . . .  ]

2 File_menu
 The File menu is . . .

3 Open
 When you choose Open from the File menu . . .

3 Close
 When you choose Close from the File menu . . .
```

However, with DECwindows XUI help, you can expand beyond a strictly hierarchical structure. Using the =INCLUDE command, you can connect DECwindows help screens to any topic, regardless of the topic's physical location in the library. For example, if your help library has a level-2 topic on printing files under the overview topic and another topic under menus describing the File menu, you can list the File menu topic as an additional topic to the discussion of printing files:

```
1 Overview
 [text describing the product . . .  ]

2 Printing_Files
=INCLUDE Menus File_menu
 To print FOO files . . .

3 Remote_printers
 [text describing remote printers . . .  ]
```

```
1 Menus
 [text describing menus . . .  ]

2 File menu
 To print, save, or restore FOO files . . .
```

In addition to the general guidelines for creating help, use the following guidelines when creating DECwindows XUI help:

- If possible, limit the length of each topic to 18 lines so that the help text fits within the default help screen size.
- To allow for the indenting of help text, limit the length of each line to 55 characters. Your text formatting tool may automatically format the text for you.
- Include a task-oriented topic for each feature of the application.
- Use task-oriented words that users can easily relate to the user interface.
- Describe application features in the order in which they are displayed on the screen.
- Include context-sensitive topics for each menu, menu item, button, and dialog box of the application.

11.2.2 DECwindows Motif Help

The DECwindows Motif Help System is a help utility available on a variety of Digital's Motif platforms. Table 11–1 summarizes the availability of DECwindows Motif Help on the platforms as of July 1992.

Table 11–1 DECwindows Motif Help Platforms

Motif Platform	Help Availability
VMS™ DECwindows Motif Version 1.1	Packaged in base platform
VMS DECwindows Version 2.0	Packaged in base platform
ULTRIX Worksystem Software™ Version 4.3	Packaged in base platform
ULTRIX Worksystem Software Version 4.2 or lower	Not available[1]
DEC™ OSF/1® for RISC Version 1.0	Not available

[1] An installable Bookreader kit began shipping on the ULTRIX online documentation CD–ROM beginning in June 1992. This kit can be installed on a UWS Version 4.2 system to make Help available.

(continued on next page)

Table 11–1 (Cont.) DECwindows Motif Help Platforms

Motif Platform	Help Availability
SUN® Motif	Not available

The main difference between the DECwindows XUI Help System and the DECwindows Motif Help System is that the DECwindows Motif Help System uses Bookreader (Version 3.0) as the display mechanism for online help.

Applications converting from the DECwindows XUI Help System to the DECwindows Motif Help System will realize the following immediate advantages without any extra effort on the part of the writer except for the conversion:

- Improved legibility of text (through different fonts and point sizes)
- Scalability (with no performance penalty for large libraries)
- A help text *look and feel* that is similar to the look and feel of the Bookreader books
- For writers using the VAX DOCUMENT authoring tool, the ability to use the same tags in the help text that are used in the books

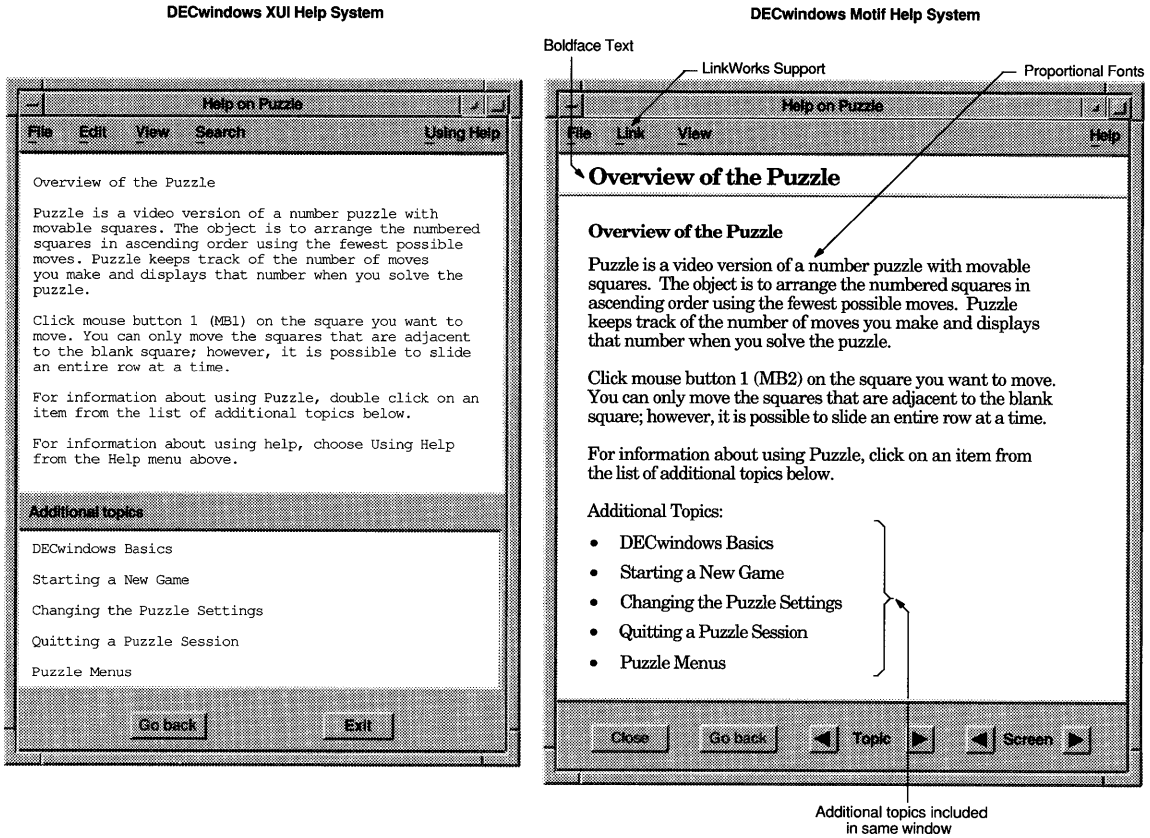
Writers can also take advantage of the following added features for the DECwindows Motif Help System files:

- Graphics capabilities
- Hotspots
- Tables

A primary advantage of the DECwindows Motif Help System over the DECwindows XUI Help System is that users can create LinkWorks™ links between online help and other pieces of information, such as mail messages, Cardfiler cards, and other Bookreader topics.

Figure 11–2 shows a sample help text as it appears using the DECwindows XUI Help System and the DECwindows Motif Help System.

Figure 11–2 Help Text from the DECwindows XUI Help System and the DECwindows Motif Help System



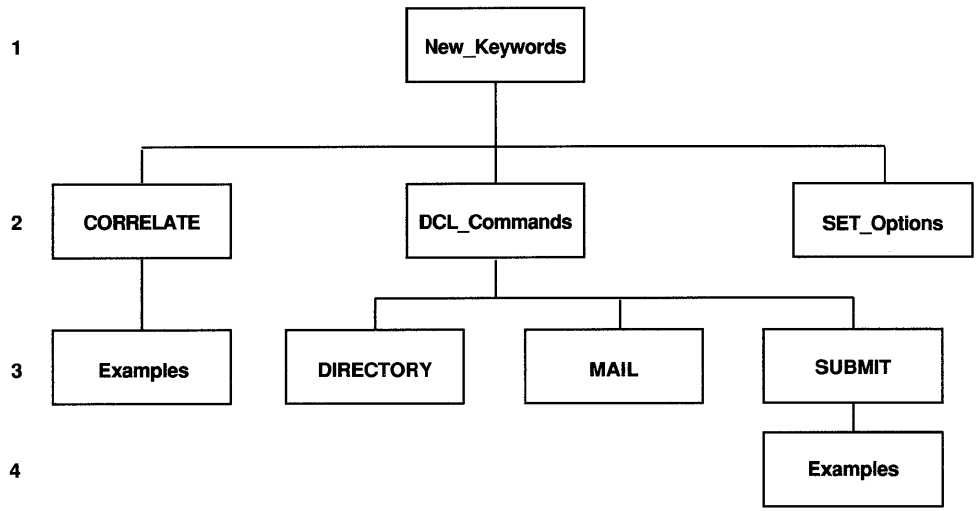
11.2.3 OpenVMS Help

OpenVMS Help screens are ASCII files that are organized into library form by the OpenVMS Librarian Utility. The help screens display a brief summary of key information. The information may be a summary of topics for new users, overview information about a product, or command formats and qualifiers for a particular product.

OpenVMS applications also provide online help within the application. This form of online help is application specific and is usually a summary of information that is in the information set. However, as more information moves on line, the help system may be the source of most information on low-level tasks or on reference information.

To create the online help, writers create an ASCII file with the help text and use the LIBRARY command to insert the new help modules into the help library. To revise help modules, writers extract help modules from the help library files, edit the help modules in ASCII form, and then use the LIBRARY command to replace the help modules. See the Librarian Utility documentation for more information. (How writers create the ASCII help modules depends on the tools they use. For example, some tools let writers use the same documentation source files for both the help modules and books. To produce the help modules, the writers process the documentation source files with special format codes.)

Help topics are arranged hierarchically. Level 1 topics are what users see when they enter HELP at the system prompt. Level 2 topics are automatically listed under the heading "Additional information available" of Level 1 topics. For example, the help topics in one module might have the following hierarchical arrangment, where the numbers in the left margin indicate the position of the topic in the hierarchy:



In addition to following the principles of writing clear, concise material, writers need to use the following guidelines when writing OpenVMS help modules. Your text formatting tool may automatically provide the proper spacing, margins, and topic title format.

- Always reserve the first column of the file for the level number (the topic's position in the hierarchy). The Librarian Utility interprets any number in column 1 as a level number and interprets the first word following the

number as the title for the help module. To avoid problems, do not put any text in column 1.

- Be aware of the width of text. The Librarian Utility indents three spaces for each level of topic below Level 1. Setting a right margin of 65, for example, is sufficient for up to 4 levels of help topics.
- Use an underscore to connect the words in multiword topic titles (for example, *SET_Options*).
- The default length of a level-1 keyword (topic title) is 15 characters. However, you can use up to a maximum of 128 characters for a keyword. See the Librarian Utility documentation for more information on signalling keyword length in the LIBRARY command.

Example 11–1 shows a sample OpenVMS Help module.

Example 11–1 Sample OpenVMS Help Module

```
1 New_Keywords
    There are three new keywords in this version of DECproduct:

      o CORRELATE
      o DCL_Commands
      o SET_Options

2 DCL_Commands
    The DCL_Commands keyword lets return to system level to perform
    different functions.

3 DIRECTORY
    DIRECTORY lets you display the files in your default directory.

3 MAIL
    MAIL invokes the MAIL utility.

3 SUBMIT
    SUBMIT lets you submit a job for batch processing.

4 Examples
    If you want to test the module you have just created, use the
    SUBMIT keyword. You can use any of the qualifiers you normally
    use with the /BATCH qualifier.

    DECproduct> DCL_Commands
    DECproduct> SUBMIT module1 /notify/queue=my$batchq
    DECproduct>
   .
   .
   .
```

11.2.4 Reference Pages

Reference pages form the online help for systems derived from the UNIX operating system. These pages are often called *manpages* because you use the `man` command to access the information. There is a reference page for each command, system call, subroutine, special file, utility, and procedure. The reference pages are divided into eight sections:

Section 1	Commands
Section 2	System Calls
Section 3	Library Routines
Section 4	File Formats
Section 5	Macro Packages and Language Conventions
Section 6	Games
Section 7	Special Files
Section 8	System Maintenance Commands and Procedures

Note that Sections 4, 5, and 7 sometimes differ among the various UNIX operating systems. For example, Section 4 on the ULTRIX operating system contains reference pages for special files; on OSF/1 operating systems, special files are documented in Section 7.

When you create a reference page, you need to determine in which section the page belongs. Some sections, particularly Section 3, have a number of subsections to make it easier for users to find information. Often, large applications have separate subsections for their reference pages within the major divisions. For example, the ULTRIX/SQL software has reference pages in Section 1sql and in Section 8sql.

The source files for reference pages are coded in nroff, an ASCII text formatter available on nearly all UNIX operating systems. The format instructions you use for nroff are known as the man macro package. A macro package consists of format instructions and definitions that specify the output for each instruction.

Many UNIX operating systems ship source files for reference pages. When a user invokes the `man` command for a particular page, the system formats the page and displays the output on the terminal. Some systems, however, ship preformatted reference pages that do not require dynamic formatting each time a user wants to view a page.

Reference pages contain a number of standard elements and some optional ones. The names and order of the elements differ somewhat among UNIX operating systems, but three elements appear in all references pages:

- Name
- Description
- Related Information

The following list shows the element names and order for OSF/1 command reference pages:

- Name
- Synopsis
- Flags
- Descriptions
- Subcommands
- Examples
- Files
- Notes
- Cautions
- Diagnostics
- Exit Values
- Related Information

Often, online reference pages are printed and serve as the reference information for the operating system as well as for applications and products that run on the operating system. Reference pages are also available through the Bookreader. The composite of the operating system reference pages is sometimes referred to as the *UNIX Programmer's Manual* in text books discussing UNIX operating systems.

11.3 Hypermedia

Hypermedia is a relatively new type of information technology. In the ideal system, users access a range of information in different formats, from traditional text and graphics to full color animated videos with sound. The information sources are diverse; users might create connections between online books, mail messages, electronic conferences, and online training.

Traditionally, users access online information linearly, in a top-to-bottom, front-to-back fashion. Hypermedia technology supports a nonlinear use of information through networks of connected information. In the ideal system, users establish their own connections between modules and set up their own criteria for accessing and sharing information.

Digital currently gives users hypermedia capabilities in several ways:

- Users can navigate Bookreader books in a nonlinear way through the use of hotspots and by accessing topics from the table of contents and index. See Section 11.1.2.2 for information on hotspots in Bookreader books.

  Users can also use hotspots in DECwindows Motif Help.

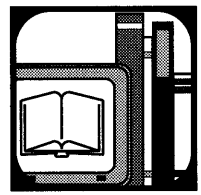
- LinkWorks is a DECwindows application that gives users the ability to create links between information that is stored and accessed by DECwindows desktop applications. For example, a user can link a DECwindows mail message with a DECwindows Calendar timeslot. A user can also make links between Bookreader topics, Calendar timeslots, and Cardfiler cards.

As with any new technology, there is continued testing and debate about the best uses of hypermedia. (In fact, the exact meanings of the terms *hypertext*, *hypermedia*, and *hyperinformation* are open.) In a recent article (see Section B.9), William Horton suggests that, to be most useful, hypermedia systems need to be used in combination with other types of online information methods (such as context-sensitive information and menus of topics), the combination depending on the type of information being presented. There are also debates about using predetermined information paths and limiting access to certain modules.

As the technology develops, what *is* clear is that hypermedia will have a significant impact on the preparation and presentation of online information. Information designers will need to think in terms of discrete modules that can be used in a variety of contexts. They will need to rethink traditional structures, transitions, and cross-referencing techniques. In addition, the heterogeneous formats of the information will require an understanding not only of text and static graphics but also of voice, video, and animation. All these changes will affect how information designers work, the types of skills needed to create and produce information, and even the structure of the information team.

12

Using Navigational Cues



Navigational cues are structural or design elements that help users find information quickly and easily. Navigational cues also help users understand the structural context of the information, helping them understand the relationship among different parts of an information component or information set.

As noted in a recent article on access aids (see Mackh and Rew, Section B.2), consistency is the key to the effective use of navigational cues. Once you establish a convention, you set users' expectations about the meaning of the element; inconsistent use confuses users rather than helps them. For example, if you use boldface type to introduce terms defined in text, use that convention throughout the component.

The following sections discuss both structural elements (Section 12.1) and design elements (Section 12.2) that you can use to help users find the information they need.

12.1 Structural Cues

Structural cues are explicit pointers to the organization and content of the material. Structural cues include the following elements:

- Tables of contents and titles

  The table of contents and index are the two main ways that users find the information they need within a book. The table of contents lists all the parts, chapter and appendix titles, and section titles in a book, including the glossary and index. The table of contents should also include separate lists of figures, tables, and examples. In hardcopy books, the table of contents also lists the starting page numbers for each element (except parts). In online books, users click on the appropriate element in the table of contents; the element is then displayed in a topic window. (See Section 11.1.1 and Section B.9.2 for more information on using the Bookreader application.)

For hardcopy books, you may also include a separate table of contents for different sections of a book. For example, you may list the contents of a reference section on a part page or tabbed divider that introduces the section. Some books list first-level section titles in the book table of contents and then list the full contents of each chapter in separate chapter tables of contents. However, note that this approach is not effective for online books because users cannot access all topics from the main table of contents.

For both hardcopy and online information, make sure that the titles listed in the table of contents exactly match the titles in the text. Also make sure that each title clearly reflects the contents of its accompanying section, figure, table, or example. The titles, both in the table of contents and in the text itself, are the users' cues to the contents of each section.

See *The Digital Style Guide* for details on the placement and format of tables of contents and for guidelines on choosing effective titles.

Because you can create hotspots in online help topics with the DECwindows Motif Help System, you can create a mock table of contents that lists all the major tasks of the application. You can include this contents listing as an additional topic in appropriate help topics (such as the On Window or On Version help topic or a Getting Started topic) so that users have a *home base* to return to when they are not sure where to go next. Users can then click on the task in this contents list to get to the help topic they need.

- Indexes

  An index is the other primary way that users find the information they need. The index is an alphabetical listing of the topics and subtopics discussed in the book. (With the DECwindows Motif Help System, you also provide an index to the online help for an application.) As Chapter 10 describes, indexes provide multiple points of entry to topics by listing synonyms and cross-references to related topics.

  See Chapter 10 for guidelines on creating effective indexes.

- Overviews

  Topic overviews are another way of introducing users to the material discussed in a part or chapter. An overview may be as simple as a list of the topics, as in the overview included with Part II. An overview may also include a conceptual description that gives a framework for the material in the chapter or part, as in the overview to Chapter 6.

- Cross-references and hotspots

  Cross-references are pointers to related information in other sections of the same component or in another component. For example, you may refer a user from one section of a book to another section of the same book:

  ```
  See Chapter 18 for more information on date and time values.
  Section 9.4 explains how to specify an edit string for a date field.
  ```

  You may also refer a user to another book or to the online help. See *The Digital Style Guide* for more guidelines on cross-references within text. Also see Section 9.4.3 and Section 10.3.3.3 for information on glossary and index cross-references.

  In online information, users click on hotspots to display cross-referenced material. For example, users can easily move from one section of a book to another by clicking on a hotspot within text. With the DECwindows Motif Help System, users can also use hotspots to navigate the online help for an application. See Section 11.1.2.2 and Section 11.3 for more information on online cross-references.

- Information road maps

  An **information road map** (also known as a *documentation map*) is a quick guide, usually a graphic, that shows users the paths they may take to learn about the product and use the information component or set. A map can be used to describe the portions of a single course or book. Maps often show users the reading paths through an information set or set of courses, suggesting which pieces of information to use in which order, depending on the user's particular area of interest. For example, the diagram shown in Figure 5–3 is an information road map that suggests different paths through the information set for database administrators and programmers. You can also use maps to show the menu structure of online help or even the menu structure of an application.

  Information road maps can be used in many different ways. For example, if a map describes a reading path through a particular component, you may repeat the map at the beginning of each part or chapter, highlighting the user's current position in the map. If the book is being produced in hardcopy form, you might place the map on tabbed dividers or part pages beginning each part. You might use a poster to present the map of an application's menu structure. In an online book, you can use a map in conjunction with hotspots to direct a user through the topics. For example, see the procedure maps in the online book *Managing a Bookreader Library*, available on both the ULTRIX and OpenVMS online documentation discs.

- Running heads and feet

  A **running head** is a string of text at the top of a page, while a **running foot** is a string of text at the bottom of a page. Both of these elements help users understand their place in a book.

  In Digital books, running feet most often identify the chapter title, while running heads indicate the section contents. Running heads are particularly effective for reference sections, where the running head indicates the name of the command, statement, and so on being described. Some groups use double-running heads, in which the top line indicates the family of items being described and the bottom line indicates the particular item being described. For example, a chapter on functions might have the following double-running head:

  ```
  Statistical Functions
  AVG
  ```

  Statistical Functions identifies the general section content, and *AVG* identifies the particular function discussed on that page.

  Place running heads and feet on the outside edges of pages, so that they are on the left edge of left-hand (verso) pages and on the right edge of right-hand (recto) pages.

- Icons and margin notes

  An **icon** is a simplified pictorial representation of an idea, a situation, or an object. You can use icons in different ways to orient users to the material being discussed. For example, you may display the icons used in the user interface in the margin, which points the user to the discussion of the icon or process. You may use a margin icon to distinguish platform-specific information from multiplatform information. This book uses icons to identify the parts and chapters that discuss the user information environment, process, and techniques. Icons further identify the chapters that describe the different stages of the user information process.

  Margin notes are textual markers that can be used in the same ways as margin icons.

12.2 Design Cues

Design cues are visual aids that reinforce structural cues or differentiate elements within text. For example, design cues often distinguish examples from text or point to the definition of a term in text.

Design elements include:

- Typefaces and type sizes

  Using different typefaces is a simple but effective way to distinguish different types of elements within text. For example, Digital information frequently uses a serif typeface for text, a sans serif typeface for titles, and a monospace typeface for examples.

  You can also use different type sizes to indicate structural relationships. For example, while chapter titles, level-1 heads, and level-2 heads may all use the same sans serif typeface, you may use progressively smaller type sizes for these elements to indicate their relative position in the organizational hierarchy.

- Emphasis

  There are a variety of typographic ways to emphasize words and phrases and thus differentiate different text elements. Common uses include:

  - **Boldface type** for new terms or the main page references in an index entry
  - *Italic type* for highlighting or for complete titles
  - SMALL CAPITAL LETTERS for subheadings or captions

  You may also use multiple colors or shading to emphasize and differentiate elements.

  Your choice of methods may be limited by your authoring tools and group conventions as well as by standards. See *The Digital Style Guide* for more information on emphasis and on color.

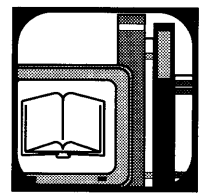
Use design cues sparingly in technical information. The temptation is strong, particularly with desktop publishing tools, to use many different design cues because they are available. This proliferation of typefaces, type sizes, and color is often called *circus poster typography* because the text pages take on the appearance of a gaudy advertisement. However, a circus poster is designed to catch the user's eye and to excite the user; it is not meant for reading at length.

Also be careful not to attach too many meanings to one design cue. For example, using boldface type to signal both new terms that are defined in text and general emphasis may confuse users because they will not know when to expect a definition.

When making decisions about which types of design cues to use, make sure to have a graphic designer as part of the team so that the cues can be designed as part of the total look of the information.

13

Overview of Usability Studies



The goal of user information is to help users *use* the product. Information that meets that goal can significantly reduce the costs of training and support.

How do you determine if your information is successful? Most user information undergoes informal and formal review by a variety of technical, editorial, and informational reviewers. Chapter 6 describes the review process and what different reviewers look for during reviews.

However, bringing users into the information development process early and often is an important way to ensure that the information suits their needs. You can implement usability methods at different points throughout the information development process. For example, during the research stage, you may use interviews to gather information about the users and tasks. During the draft stages, you may use other methods to check specific tasks or portions of the user information. Later in the process, you might use logging techniques to identify patterns in system use. Testing throughout the information development process helps to ensure that the information meets its goals and saves you, the company, and the customer time and money.

You do not have to rely on the services of a professional usability engineering group to devise and implement usability studies. This chapter discusses techniques that you can use on your own to ensure that your user information meets its goals.

This chapter discusses:

- Planning for usability studies (Section 13.1 and Section 13.2)
- Working with participants (Section 13.3)
- General process for conducting usability studies (Section 13.4)
- The types of usability methods, including:
  - Questionnaires (Section 13.5)

- Telephone interviews (Section 13.6)
- Usability edits (Section 13.7)
- Summary tests (Section 13.8)
- Read and locate tests (Section 13.9)
- Contextual inquiry (Section 13.10)

Section 13.12 summarizes the different types of usability studies and their benefits.

13.1 Deciding What to Test

You may not have the time or resources to test an entire information set or even an entire component. Therefore, you must identify the most important material and focus your efforts on those critical parts. Critical pieces might include:

- Procedural material
- Material used most frequently
- Material that might be confusing for users
- Information critical to the primary use of the product
- Safety procedures

To identify the critical pieces, answer the following questions:

- Which user tasks are most important for the target audience? For example, critical user tasks may include installing the product or using certain features.
- What are the product goals? For example, the goals may include the customers' ability to install the product in 20 minutes.
- What are known problems with the product and information set? Check the project archives for reader comment cards and product problem reports. There may also be electronic bulletin board discussions (such as VAX Notes™ conferences) that discuss the product's success and problems.

13.2 Writing a Testing Plan

Ideally, you include your usability testing plans in the information plan. However, you may not know enough when you write the information plan to plan all usability evaluations, particularly for a Version 1.0 product. Whether or not you include the testing plans in the information plan, you can still devise usability studies throughout the draft and review process.

To plan for usability evaluations, you need to understand the following elements:

- **Testing constraints**

  State the limitations that affect the testing, such as restrictions on time or expenses, the availability of suitable participants, or the availability of the product or a prototype.

- **Testing method**

  Specifies the usability method you plan to use and the rationale for using that type of test.

- **Testing goal**

  Includes each of the following components:

  - The **performance objective** states what you want users to be able to accomplish with the information being tested.
  - The **condition** specifies what resources or knowledge the participants must have.
  - The **measurement criteria** specify how you will determine if the information meets its usability goals. When you set the measurement criteria, consider how critical the task is for using the product. Set the measurement criteria very high for critical tasks.

For example, Figure 13–1 shows the testing plan for an installation component.

Figure 13–1 Sample Usability Testing Plan

Constraints:
We need five participants who have never installed DECproduct. In addition, we must have at least 2 weeks between the first draft and the second draft dates to run the sessions, evaluate the responses, and incorporate the results into the second draft. In addition, we must have a commitment from engineering to change the installation process if necessary.

Testing method:
Formal usability edit. Observers will watch the participants install DECproduct, asking them to talk aloud during the session so that the observers can determine when the participants hesitate or have problems in following the instructions in the installation guide. A 1–hour (maximum) installation process for DECproduct is vital to its place in the market. Watching and listening to users inexperienced with such an installation is the best way to determine problems in the description of the installation procedure.

Testing goal:
Performance objective: Install DECproduct.

Conditions: Participants have access to a prototype of DECproduct, a copy of the *DECproduct Installation Guide,* and all other user information associated with the product (for example, letters, release notes, parts lists, and other user information).

Measurement criteria: 95% of the participants successfully install DECproduct within 1 hour (when users invoke the product, it runs as expected).

13.3 Working with Participants

Knowing how to work with participants is vital to the success of any usability study. You may use customers and employees as participants. The procedures for contacting customers are more formal than the procedures for contacting internal employees.

13.3.1 Recruiting Customers as Participants

To find customers interested in participating in your study, work with product management, the field test administrator, the product's marketing representative, and sales account representatives. Customers who submit product problem reports may be interested in helping you improve the user information. In addition, you may also have contacts through a user group or special interest group.

After you identify potential participants and before you make any contact with customers, make sure you call the appropriate sales account manager. Account managers must be informed of any contact between you and their customers so that they can be fully informed when talking with customers. You may also want to talk with the local service representative before contacting customers.

When working with customers (or anyone outside your company) on projects that involve prototypes or unannounced products, you must be sure that the participants sign a nondisclosure agreement. A **nondisclosure agreement** is a legal document that ensures customers will not communicate information about the products to other people outside your company.

13.3.2 Recruiting Internal Employees as Participants

There are a variety of ways to find internal employees who might be interested in acting as participants:

- Ask the members of the project team or other colleagues if they know of potential participants.
- Send memos or mail messages to internal mailing lists to reach different groups of employees, or use your product interest list.
- Post electronic notices in relevant bulletin board discussions (such as VAX Notes conferences).
- Post hardcopy notices on bulletin boards at sites with qualified participants.

13.3.3 Requesting Participation

When you call customers or internal employees to ask them to participate in the study, always estimate the amount of time required for the session. People are more likely to volunteer if they know how much time they are being asked to commit. Briefly describe the product, the procedure, and any prerequisite knowledge or skills. Make it clear that you are studying the user information, not the participant. Example 13–1 shows a sample request for participation.

Example 13–1 Requesting Participation in a Usability Study

Usability Study
Call for Participants

Hello,

We will be conducting a usability study on a Digital product that requires users to be familiar with personal computers and the MS-DOS® system. The purpose of this study is to help make this product easier for our customers to use.

For this study, we need volunteer participants who have experience in some or all of the following procedures:

- Using DOS commands to do tasks such as:

  Creating and editing batch files
  Using directories
  Setting path names
  Copying and backing up files and disks
  Initializing disks

- Installing PC software (MS-DOS system and applications)
- Installing PC communications hardware, such as Ethernet cables in a local area network or communications options in a PC system
- Installing personal computer (PC) hardware

Participants must NOT have experience in:

- Managing an OpenVMS system
- Installing or managing a Digital PCLAN/Server system

This study will require each participant to spend up to one full day, or, more likely, one half day, depending on which tasks are to be performed. We would like to conduct the studies sometime between December 2 and December 16, 1991.

It is possible that we will not be able to include everyone who has volunteered for this study. We need some information about any experience you might have had with personal computers and the OpenVMS operating system. Attached is a brief questionnaire. Please take a few minutes to answer the questions, and return your answers to me as soon as possible.

You can either send your answers in an electronic mail message to NODE::USER, send written answers to me at [mailstop], or call me at 555-1212.

(continued on next page)

Example 13–1 (Cont.) Requesting Participation in a Usability Study

```
Thank you for your interest in the upcoming usability study for
DECproduct. Your participation in these studies will be a valuable
contribution to help make Digital products easier for our
customers to use.

Thank you,
[Name]
[Group name]
```

13.3.4 Screening Participants

After you contact the people who have expressed interest in participating in the study, screen the candidates. Select only those participants who match the description of your audience. If you have more than one audience that you want to study, include participants who represent the full range of people likely to use the product.

Use a questionnaire or an interview to screen candidates. Ask all candidates the same questions. Be careful to ask unbiased questions, and do not emphasize which characteristics you want and which you do not want. Select the participants based on how well they fit your target audience or audiences.

Example 13–2 shows a questionnaire for screening participants for a usability study of an installation procedure.

After you choose the participants, thank the candidates whom you did not choose. Explain that, based on their responses to the questionnaire, they do not fit the target audience. If candidates were particularly interested but did not fit your needs, you might keep them on your interest list for future studies.

Example 13–2 Screening Candidates for a Usability Study

```
1.  Have you ever installed personal computer (PC) hardware?

        ___ No

        ___ Yes - Briefly describe the PC hardware you have installed.


2.  Have you ever installed communications hardware, such as
    Ethernet cables for a local area network or communications
    options in a PC system?
```

(continued on next page)

Example 13–2 (Cont.) Screening Candidates for a Usability Study

___ No

___ Yes - Briefly describe the communications hardware you have installed.

3. Have you ever installed PC software (operating systems or applications)?

___ No

___ Yes - Briefly describe the PC software you have installed.

4. Are you familiar with DOS commands?

___ No

___ Yes - Which of the following have you done?

____ Create and edit batch files
____ Use directories
____ Set path names
____ Copy and back up files and disks
____ Initialize disks
____ Any others? If so, please list below:

5. Are you familiar with OpenVMS system management tasks?

___ No

___ Yes - Which of the following have you done?

____ Install or update the OpenVMS operating system
____ Install or update any OpenVMS layered product
____ Create OpenVMS user accounts
____ Back up OpenVMS files and disks
____ Manage print and batch queues
____ Start up or shut down an OpenVMS system
____ Any others? If so, please list below:

6. Depending on which tasks you will be doing in this study, it will require either one half day or a full day of your time. The studies will be conducted during the weeks of December 2 and December 9. Please list the three days during these two weeks that would be convenient for you:

(continued on next page)

Example 13–2 (Cont.) Screening Candidates for a Usability Study

```
7.  Studies requiring volunteers with PC experience will also be
    conducted sometime in Q3 (January, February, or March). If,
    for some reason, you are unable to participate in the December
    studies, would you be interested in participating in future
    usability studies?

    ____ No

    ____ Yes

Please include your name, electronic mail address, and DTN.
Thank you!
```

13.3.5 Scheduling Usability Studies

After screening the candidates and choosing the most suitable participants, contact each person and schedule a time for the study session. Tell each participant that you will send mail or call a few days in advance to ensure that no scheduling conflicts have developed.

13.3.6 Reminders and Follow-Up

A few days before the usability session, call or send electronic mail to remind participants of the date and time of their sessions. If a scheduling conflict has developed, try to reschedule the session.

After the session is complete, be sure to follow up with each participant by letter or phone:

- Thank them for their participation.
- Let them know how they can learn about the findings if they are interested.

13.4 General Process for Conducting Usability Studies

No matter which testing method you use, developing a usability study follows the same general process:

1. Design the study. It is helpful to have someone familiar with the particular method review the material at this stage.
2. Ask several people representative of the users to perform the test. This pretest (or pilot) helps to identify and solve unanticipated problems in the wording or the amount of time needed to complete the session. In addition, participants may respond in ways you had not anticipated. The pretest

also shows when the material is more complex than anticipated and needs to be simplified.

3. Revise the study based on the results of the pretest. As needed, edit the material for content, layout, sequencing, and style. Make sure the material is worded clearly. Eliminate bias and jargon.
4. Conduct the study.
5. Analyze and interpret the data.
6. Report findings in oral and written reports.
7. Incorporate changes to the information based on the findings.
8. Retest.

13.5 Questionnaires

A **questionnaire** is a set of questions that you can mail to participants or ask in telephone or face-to-face interviews. Questionnaires are particularly useful for collecting the following kinds of information:

- Facts. For example:

  How long have you worked with DECproduct?

  How often do you use the DECproduct reference manual?

- Attitudes. For example:

  How usable is the information in the *DECproduct Installation Guide*? Circle the number that best represents your answer:

  ```
  Not at all                              Extremely
  usable                                  usable
    1          2          3          4          5
  ```

- Beliefs. For example:

  What aspects of the *DECproduct Installation Guide* make it easy to use?

Although questionnaires may seem easy to develop and administer, you must plan for them and test them. Otherwise, they may result in low response rates, poor interviews, and uninterpretable data.

Use the following process to ensure that your questionnaire is well designed:

1. Decide what information you want to collect and how you plan to analyze the data.
2. Decide how you will deliver the questionnaire:
   - Hardcopy through mail
   - Electronic mail
   - Telephone interview
   - Face-to-face interview

   Your delivery method affects the design of the interview. For example, if you decide to use electronic mail, you might design the questions to fit on a 25-line screen. If you decide to use telephone interviewing, design the questionnaire to aid the interviewer.
3. Write a first draft of the questionnaire. Consider the type of questions you want to ask participants:
   - In an **open-ended question**, answers are not predefined. Participants fill in their own answers. For example:

     What suggestions do you have for improving the *DECproduct Installation Guide*?

   - In a **close-ended question**, answers are provided. The user makes a choice among answers. For example:

     What is your general opinion of the information for the DECproduct applications? (Circle only one number.)

Poor		Fair		Excellent
1	2	3	4	5

     Which of the following documents did you find most useful in learning the DECproduct software? (Circle only one letter.)

     a. User's Guide

     b. Reference Manual

     c. Quick Lookup Guide

- You may also combine open-ended and close-ended questions. For example:

  Do you use any collections of symbols to prepare your scientific reports?

  ___ No

  ___ Yes What types of symbols are important to you? (Please list the types of symbols.)

  _____

  _____

  _____

  I use the DECproduct Reference Manual mainly for: (mark only one)

  ___ Quick reference for syntax

  ___ Advanced reference information that isn't on line

  ___ Examples for coding

  ___ Other. Please explain:_____

  _____

  _____

4. Use the following guidelines when writing the questions:

   - Place the most important question first and demographic questions (about age, occupation, address) last. Make the first question in particular easy to understand, applicable to all participants, and related clearly to the main purpose of the study.
   - Ask one question at a time. Make each question specific, technically accurate, and related to a specific goal. Group together questions that are similar in content or structure.
   - Make your answer categories as inclusive as possible. For example, if you ask a question with a range of possible answers, give the complete range, as follows:

     How long have you been using DECproduct? (Check one item.)

     ___ Never

     ___ Less than 1 month

     ___ 1-3 months

     ___ 3-6 months

     ___ More than 6 months

- Questions should require minimal effort from the participants. For example, have participants circle answers rather than write them in. In an online questionnaire, minimize the amount of tabbing or spacing needed to answer a question.
- Use transitions to start a new group of questions, to start a new page, or to break up a long series of questions on the same topic.
- If possible, make sure that each question fits on a single page or video screen and that the questions and answers are arranged vertically. For example:

  Use

  ```
  Question

     ___ Response 1
     ___ Response 2
     ___ Response 3
     ___ Response 4
  ```

  Do not use

  ```
  Question

     ___ Response 1          ___ Response 2
     ___ Response 3          ___ Response 4
  ```

- Make sure that participants can clearly distinguish questions from answers.
- Give instructions about how to answer questions and when and where to return the questionnaire.

5. Attach a cover letter to the questionnaire.

   Specify when and where to return the questionnaire. Decide how to follow up with people who do not respond to the first questionnaire.

Section A.4 contains a quality checklist for questionnaires.

13.6 Structured Telephone Interviews

A **structured interview** is a conversation with one or more participants based on a prepared set of questions or a script. There are two types of structured interviews:

- Telephone interviews
- Face-to-face interviews

This section concentrates on telephone interviews, but the processes are similar.

You can use a telephone interview to:

- Gather facts and opinions about the user information and the product
- Ask more complex questions than you can in written questionnaires
- Explore the participants' answers more fully than in written questionnaires
- Follow up with people who have participated in other forms of testing or inquiry

Section A.5 contains a quality checklist for telephone interviews.

Note

While you can call users without any advance planning, this is not the recommended method for conducting telephone interviews. Such unplanned interviews interrupt the participants' work. In addition, the participants cannot prepare for the interview, and the information you receive may be less detailed.

When setting up interviews, you may or may not provide the participants with copies of the questions to be asked. However, the more material the participants have before the interview, the more information they will be able to give during the interview.

Use the following guidelines in designing and implementing a telephone interview:

- Design the questionnaire for the type of interview.

  If the participants will not have a copy of the questionnaire, you need to add introductory and explanatory material, a script for the interviewer to follow in explaining the study to the participant. If both the interviewer and the participants will have copies of the questions, you may have two versions: the participants have a copy with only the questions, while the interviewer's copy includes some explanatory text and coding information.

  If the participants have not agreed in advance to the telephone interview, the interviewer must give the participant the opportunity to decline to be interviewed.

- When you design the telephone interview, you must consider two separate audiences:

Participants	Interviewers
Might not expect telephone calls.	Must keep constant the pace of the dialogue.
May let their attention wander from the conversation to other work they have at hand or may be interrupted by coworkers.	Must listen for changes in the mood or attention of the participants.
Can tire more quickly than in a face-to-face interview.	Must be able to both read questions and write down the answers while holding the telephone.
May lack the visual cues to follow the questions (if they do not have a copy of the questionnaire). They may therefore have trouble following the questions or be unsure when the interviewer expects a response.	Must be able to give information about the product.

- Contact participants to introduce the upcoming interview and establish your credibility. Include the following information:
  - Who you are
  - The name of your company and group
  - The date and time you will call
  - How the person was selected for the interview
  - The goal of the interview
  - The anticipated length of the interview (derived from the pretest)
  - The benefits of the study
  - The name and telephone number of the project leader (so that the participant can check to make sure this is a legitimate study)
- Train all interviewers in proper telephone interview techniques.

  Design the training to cover pacing, etiquette, how to handle questions from participants, how to respond to emotional participants, how to write answers as the participant talks, and how to probe for more detailed responses.

Prepare a list of answers to the following questions that users often ask during interviews:

- What is the purpose of the interview?
- How do I know who you are?
- Is the information anonymous? Is it confidential?
- Do I get a copy of the results?
- Who is my sales representative?
- How can I order this user information? (Or hardware, software, and so on)

13.7 Formal and Informal Usability Edits

A **usability edit** is a testing method in which participants make specific notes when they have problems (or success) using the information with the product to perform tasks.

Usability edits can identify frequently used sections of the information as well as helpful or particularly usable sections. The user feedback is an indication of where the product and the user information need improvement. Usability edits can point out the following types of problems:

- Ambiguous or misleading information
- Extraneous information
- Gaps in explanations or procedures
- Problems with the navigational cues, such as missing index entries
- Undefined or unclear terminology
- Missing examples and graphics

There are two types of usability edits:

- Formal

  In a **formal usability edit**, observers watch each participant and record any disruptions in the user's task flow. (The observers may be members of the information team or include other project team members.) A formal usability edit may last from 1 to 4 hours. See Section 13.7.1 for more information on formal usability edits.

- Informal

  In an **informal usability edit**, you give participants the user information, access to the product, and a coding scheme for marking the information as they use the product. An informal study may occur over weeks, even months. See Section 13.7.2 for more information on informal usability edits.

The type of usability edit you choose depends on the time that you and the participants can spend together, the number of usability issues you think they will find with the information, and the type and amount of information you need. If you think there may be many usability issues, conduct a formal usability edit.

Because usability edits are easy to administer, you can repeat them throughout the information development process. Indeed, they are most helpful when you conduct several studies on the different revisions of the material.

13.7.1 Formal Usability Edits

Use the following process when conducting a formal usability edit:

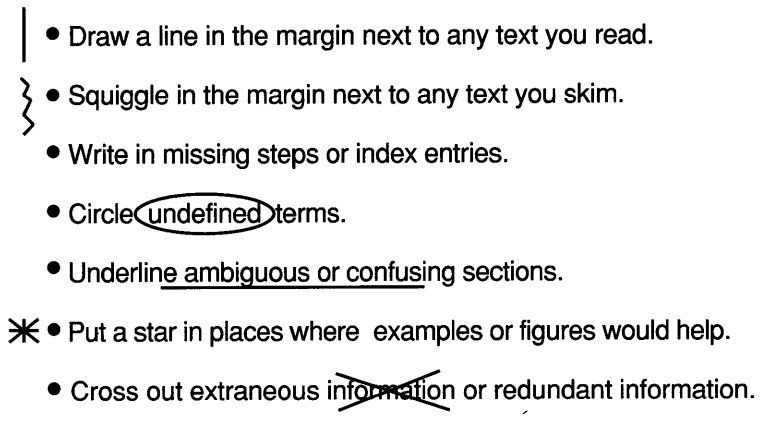
1. Give the participants the user information and access to the product.
2. Give the participants a written series of tasks that they will perform while you observe them.
3. Ask the participants to talk aloud while they try to accomplish the tasks.
4. Observe the participants, noting hesitations, errors, and so on, which are indications of usability problems.
5. At the end of the session, discuss what occurred during the session. Ask the participant to discuss areas that were particularly frustrating or difficult. You may also ask the participant questions based on your observations.

13.7.2 Informal Usability Edits

Use the following process when conducting an informal usability edit:

1. Give the participants a copy of the user information and make sure they have access to the product.
2. Explain the coding scheme you want the participants to use in marking the information. Figure 13–2 shows a sample coding scheme. The coding scheme lets them know what types of information you are looking for.

Figure 13–2 Coding Scheme for an Informal Usability Edit



3. Make arrangements for collecting the comments from the participants on a specific date.
4. When you collect the comments, briefly discuss the comments with each participant. Make arrangements for how you will contact the participant if you have questions.

13.8 Summary Tests

A **summary test** is a testing method in which participants read a segment of user information and then summarize the major points. The difference between the participants' responses and a summary provided by the person who wrote the user information determines the usability of the material.

Summary tests are particularly useful in determining if participants understand conceptual information or a sequence of tasks. You can also use the tests to evaluate the clarity and usefulness of figures and tables.

Summary tests require little preparation and little time to conduct. Many times, you can find internal employees who represent the target audience closely enough to participate in summary tests. The tests may take as little time as 10 minutes for each participant; they may last longer, depending on the length of the material you are testing. Because you do not need to watch each participant, you can conduct summary tests with several participants at one time.

Use the following process to conduct a summary test:

1. Ask the writer to write down the main points of the material to be tested. Determine how closely the participants' answers must match the writer's summary for the information to meet its usability goal.
2. Ask the participants to read the information being tested. Tell them that you will ask them to write down the main points of the material later.
3. After a suitable amount of time, check that most participants have finished reading the material.
4. Ask the participants to write down the major points of the material without looking at the material.
5. Collect and evaluate the responses.

13.9 Read and Locate Tests

A **read and locate test** is a usability method in which participants try to find information that answers particular questions. Read and locate tests measure the effectiveness of navigational cues, such as the table of contents and index, and the clarity of the information. A component meets its usability goals if the participants can:

- Find the answers to the questions
- Find the answers in the place you expect them to look

Read and locate tests can help you identify:

- Buried information
- Missing information
- Redundant information

Writing the Questions

In designing the read and locate test:

- Focus on key tasks that users perform with the product.
- Test both material that you feel is strong and material that you feel is weak.
- Balance the number of easy and hard questions, and mix the order of questions.

Conducting the Session

Use the following process to conduct the session:

1. Give the participants a set of instructions, the questions, and the material being tested. Figure 13–3 shows a sample instruction sheet.

Figure 13–3 Instruction Sheet for a Read and Locate Test

This study asks you to answer certain questions. Use the *DECproduct Guide to Database Management and Performance* to look up the answers to the questions even if you think you know the answer. If you cannot find an answer, simply write down the time and move to the next question.

For each question, please provide the following information:

- The time you started looking for the answer
- The time you found the answer
- The number of places you looked before finding the answer
- The section number of the answer
- The answer

Remember, we are not tetsting your skills and knowledge –– rather, we are testing the document.

Any additional comments are welcome.

Thank you for your participation!

2. Ask the participants to write specific answers and to include where they found the answers, including section or page numbers.
3. Watch several participants. This gives you a sense of how the participants search for information as well as where they look for it. Observing also gives you a sense of how long it takes the participants to find the information. You also have the opportunity to ask participants questions about what they are doing at particular points during the session.

4. Follow up with a short interview of the participants. (This may be particularly helpful if you were not able to observe the session.) You may use an attitude questionnaire to check the participants' confidence in finding the information about the topic. You may also use face-to-face interviews to solicit the participants' ideas for improving the information's usability.

Analyzing the Results

Use the following process to analyze the data from the study:

1. For each question, determine how many participants found the expected answer.
2. For each question, determine how many participants looked for the information in the place you expected.
3. Based on the findings, decide how to change the user information:
   - If many participants answered the question correctly and found the information in the expected place, the user information most likely meets its usability goals.
   - If many participants looked in the expected place but did not find the expected answer, consider making the following changes:
     - Move the information so that it is more visually prominent.
     - Clarify the information.
     - Reorder the information so that it receives more emphasis.
   - If many participants did not look in the expected place but found the expected answer, consider making the following changes:
     - Reorder the information.
     - Remove unnecessary information from the index or table of contents.
     - Remove redundant information.
   - If many participants did not look in the expected place and did not find the expected answer, consider making the following changes:
     - Add missing information.
     - Change the organization.
     - Clarify the terminology.
     - Move information so that it is more visually prominent.

- Reorder the information so that it receives more emphasis.

In addition, you may also use another test method, such as an interview, to complement the read and locate test. This can help you determine if the test was at fault or if you need to revise the task analysis you did during the research and planning stages (see Chapter 3 and Chapter 4).

13.10 Contextual Inquiry

Contextual inquiry is an interviewing method that involves questioning and listening to users as they do their regular work in their normal work environment.

Contextual inquiry can provide:

- Descriptions of tasks and sets of tasks that users perform
- Information on how different products are used together
- The terms people use in their daily tasks
- Detailed design data
- Descriptions of usable and disruptive aspects of the product

Contextual inquiry is thus a powerful tool for analyzing the audience and product and for determining the accuracy of your view of how the product and user information are used. For example, contextual inquiry may show that customers are confused by the terminology in the user information. The participants consistently use *term x* as they describe their work, but the user information uses *term y*. You therefore need to reconsider the terminology in the user information.

If possible, record the session on audiotape or videotape so that you can concentrate on the participant during the interview, not on taking notes. You can then use the tape later for your analysis.

It is also a good idea to have two interviewers. One person acts as the primary interviewer. The other person operates the camera or tape recorder or takes notes and highlights important aspects of the interaction people have with their computer systems. The notes include events that:

- Create a smooth work flow
- Cause repeated disruptions in work
- Are inconsistent in the participants' view

Use the following process to conduct a contextual inquiry:

1. In advance, contact each participant to make the arrangements for the interview.

   Explain the purpose of the interview and the procedure. Tell participants how long you expect the interview to last; a typical session may last up to 2 hours.

   Ask the participants if they object to being taped. If they do not, find out if there are any special arrangements you need to make at the participants' sites. (You may have to talk with their management or security staff.) Tell them that you will bring a recording consent form that specifies how the tapes will be used.

2. When you meet with each participant, introduce yourself and discuss the focus for the interview.

   The focus may be what people find usable and unusable about a product, how different products work together, or what tasks are important to the participants' work. Ask participants to briefly describe what they will be doing during the interview and what tools they will use. Tell participants that you will observe their work, ask questions, and share your interpretations of the ways in which the computer system supports or impedes their work.

3. Ask the participant to sign the recording consent form.

4. Make it clear to participants that they can take a break at any time.

   If a participant has to answer the telephone or talk with a colleague during the interview, respect the person's privacy and ask if you should leave the office.

5. As you observe the participants, be aware of how the social and physical environment affects their work. Is the user information located in an open office? Are there distractions?

   When you see puzzled looks, pauses, rereading of the user information, or signs of frustration, talk with the participant about what is happening. Ask open-ended questions such as "What are you trying to do?" "What did you expect to find in the user information?" "How could the system make this task easier for you?"

6. At the end of the interview, summarize the session and share your interpretation with the participants. Ask for samples of nonconfidential work that you can take with you as reminders of the type of work.

Ask questions about any events that you did not understand during the interview. Also ask any standard questions that you want all participants to answer (including demographic information).

7. Thank the participants and ask if you may call later to clarify any issues that come up when you review your notes or the session tapes.
8. Follow up with a thank-you note to each participant and to any managers who were involved in setting up the interviews.

13.11 Other Usability Study Methods

The following list briefly describes additional usability study methods:

- Critical incident tests

  In a **critical incident test**, you ask participants to describe successful or unsuccessful events as they use a product. The participants also rate how critical the incident is for completing the task. This type of information can help the project team set priorities for revisions to the product or information.

- Logging

  Logging is a method of collecting the participant's use of a product or the user information. Logging can help you analyze tasks, eliminate unnecessary features or information, and determine the most common ways users do tasks.

  The capability to capture users' keystrokes and system messages may be built into the software. If so, all users need to know that the logging capability exists and must have the option of turning off the logging feature. Logging is a tool for improving the product, not for evaluating the users.

- Performance tests

  A **performance test** is similar to a formal usability edit except that the participants are timed as they work on a task and the number of errors they make are noted. You then revise the product or information to improve the time needed for the task and to reduce the number of errors. Performance tests are often videotaped.

- Protocol-aided revision

  In a **protocol-aided revision**, participants are asked to complete a given task and talk aloud while they do the task or read the user information. These sessions are usually audiotaped or videotaped, often in a lab setting. The transcription of the session is called a *protocol*. Data from these

sessions can be very rich, but it takes much time to transcribe and analyze the data.

- Focus groups

  Also known as **group interviews**, **focus groups** are a gathering of several people to discuss a certain topic. After the participants fill out a short questionnaire about their opinions on the topic, a facilitator leads a group discussion to determine areas of agreement or disagreement.

  Focus groups are best for gathering wish list items, general attitudes, and reactions to prototypes or products. However, focus groups may be expensive and yield mainly qualitative data. They also require a trained facilitator.

13.12 Summary: Selecting a Usability Method

Table 13–1 describes the benefits of and issues with the testing methods discussed in this chapter.

Table 13–1 Comparison of Usability Study Methods

Study Method	Benefits	Issues
Mail questionnaire	Low cost. Easy to distribute to many people. Fast implementation.	Low response rate possible. High probability of biased sample. Difficult to get detailed answers.
Structured telephone interview	Low cost. High response rate. Lets you ask follow-up questions.	Questions must be relatively simple. Requires interviewing skills. Participants might be distracted.

(continued on next page)

Table 13–1 (Cont.) Comparison of Usability Study Methods

Study Method	Benefits	Issues
Formal usability edit	Lets you see user interact with product. Gives qualitative and quantitative data.	Artificial task. Requires interviewing skills. Requires a working product or prototype.
Informal usability edit	Quick. Low cost. Requires few resources. Requires little training.	Requires a working product or prototype.
Summary test	Quick. Low cost. Lets you isolate specific areas to test. Requires little training.	Artificial task. Not useful for long sections.
Read and locate	Low cost. Requires little training. Yields data on information retrieval.	Artificial task. Requires time to develop the questions. Requires another method to determine representative tasks.
Contextual inquiry	Lets you observe the whole system while the user works. Yields information about user tasks.	Time-consuming to analyze data. Interrupts participant's work. Yields only qualitative data. Requires interviewing skills.

(continued on next page)

Table 13–1 (Cont.) Comparison of Usability Study Methods

Study Method	Benefits	Issues
Critical incident	Can choose a convenient method of distribution: online log, written diary, questionnaire, or interview. Requires minimal development time. Rates the importance of problems.	Time-consuming for participant. Interrupts participant's work.
Logging	Gives qualitative usage data. Yields a large amount of data.	Requires special software to collect data. Time-consuming to analyze data.
Performance test	Lets you see user interacting with product. Yields quantitative data.	Artificial task. Requires a working product or prototype. Time-consuming to analyze data. Requires scheduling. Requires interviewing skills.
Protocol-aided revision	Lets you analyze thought processes. Can be compared with published data.	Time-consuming to analyze data. Often requires follow-up.

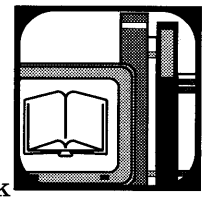
(continued on next page)

Table 13–1 (Cont.) Comparison of Usability Study Methods

Study Method	Benefits	Issues
Focus group	Yields information about general issues. Provides group's understanding of problems and solutions. More flexible than mail questionnaires. Lets you explore the participants' answers.	Requires a trained facilitator. Expensive.

14

Conducting Trademark Searches



During the draft and review process, the writer and editor must keep track of which trademarks are used and how they are used. The editor may use the project style sheet (see Section 9.3.1) to maintain a list of trademarks. The information team needs to know the following information:

- If a product or service name is a trademark or service mark
- Whether the trademark is registered or not
- The owner of the trademark
- The correct form of the trademark

This chapter discusses how to track elusive trademarks. See *The Digital Style Guide* for details on how to use and refer to trademarks.

Trademark information, like any technical information, may change frequently. If you do not have an updated list of trademarks, ask your product manager or legal representative to get the correct information. Specify exactly what you need to know, and give a deadline by which you need the information. In most cases, using either the product manager or legal representative as a resource is the correct procedure, letting the writer and editor concentrate on developing the user information rather than researching trademarks.

However, there may be times when neither resource is available. Use the following resources to research trademark information:

- Your company library may research trademark information. Call the library and ask for the Reference Desk. To help the librarian research the trademark, provide the following information:
  - Product name
  - Name of the company that owns the trademark, if you know it
  - How you are using the trademark (for example, referring to it in a user manual)

  - When you need the information
  - Any other useful information, such as the type of product or service

- Third-party marketing literature and product documentation usually contains information about company trademarks.
- If you know the name of the company that owns the trademark and can get the telephone number, direct contact may be the fastest way to check the information. Call the company and ask for their legal department. If the company does not have a legal department, ask for the publications, marketing, or sales department.

  Give your name, title, and the name of the company you represent. Be specific about the information you need and the deadline by which you need the information.

Part IV
Appendixes

This part contains two appendixes:

- Appendix A contains a series of checklists for assuring the quality of product and audience research, information plans, online information, usability tests, and reproduction packages.
- Appendix B is a selected bibliography of information on technical communication.

A

Quality Assurance Checklists

Use the following checklists as guidelines for quality assurance during the information development process. The checklists cover the following topics:

- Audience and product research (Section A.1)
- Information plans (Section A.2)
- Online information (Section A.3)
- Questionnaires for usability studies (Section A.4)
- Telephone interviews for usability studies (Section A.5)
- Reproduction packages (Section A.6):
  - Reproduction proofs (Section A.6.1)
  - Mechanicals (Section A.6.2)
  - Color and screen markup copy (Section A.6.3)
  - Print specifications (Section A.6.4)
  - Assembly sheet (Section A.6.5)
  - Film master proofs (Section A.6.6)

A.1 Researching Checklist

Use the following checklists when gathering information about your product and audience:

Audience Research

In gathering audience information, ask the following questions:

- ☐ For whom is the information intended? Customers? Third-party partners? Internal users?
- ☐ How varied are the users' skills?
  - What is their educational level?
  - What is their technical background?
  - What is their reading level?
  - Do they have any special requirements?
- ☐ What is the user environment?
  - Where will the product be used? For example, will the product be used in a large office setting, small business, or academic setting?
  - What are the standard job titles within the environment? This information helps to identify the groups of users and their skills. (However, job titles do vary across companies and cultures, so you must use this information carefully.)
  - What is the frequency of turnover? This data can help you determine how much time users have to learn to use a product.
- ☐ What are the work flow patterns?
  - What are the major work tasks? How much time is spent on tasks? Who is responsible for correcting errors? Maintenance?
  - What are the patterns of interaction? How many users have access to the information? How is data passed among users?
  - How do users find the information needed for new tasks?
  - Where do users go for information to solve problems?
  - If there is existing user information, what pieces do users find most useful? Are there pieces that they do not use?
  - How much time can users devote to initial training?

☐ What is the effect of the product on the users?

- Why are they interested in using the product? What parts of the product are they interested in?
- Does it allow more time for other important tasks? Does it establish new types of jobs?
- Does it create tasks that are repetitious or boring? Does it force users to work in isolation from each other? Does it force them to work together in unproductive ways?

Product Research

As you research the product throughout the development cycle, ask these questions:

☐ What portions of the product are visible to the users?

☐ Is the product new? Is it an upgrade? What similar products exist at your company or elsewhere? What was the history of the related product in your company? Is there anything significant to be learned from the information team of that product?

☐ What information about the product already exists?

☐ What software or hardware is required for using the product?

☐ What types of problems is the new or upgraded product intended to solve?

☐ Are the product functions or tasks similar to those commonly performed outside the computer environment? For example, electronic mail and text editors are products whose tasks are familiar to anyone who sends letters or writes at a keyboard. The conceptual framework for such a product does not need extensive explanation.

☐ How many tasks can be performed using the product? How detailed is each task? Do many tasks require subtasks?

☐ How will the information set be distributed? (For example, will the information be distributed with the product kit, on a CD–ROM, in hard copy?)

☐ With what standards must the product comply?

☐ Will the product be translated? Will it be localized for particular geographies? (While this may not make a difference in the content or presentation of the material, it may make a difference in the process.)

For each function and feature, ask the following questions:

☐ What is it supposed to do?

- [ ] What is the result of using the feature?
- [ ] What are the defaults?
- [ ] What advantages are there in the feature?
- [ ] Are there formatting or syntax rules to watch out for?
- [ ] Does this feature enhance or replace an old one?
- [ ] Will this feature be mentioned in more than one context?
- [ ] Do other publications need to be updated because of this information?

A.2 Information Plan Checklist

Use the following checklist when reviewing information plans. The checklist assumes that the plan contains printing and packaging information.

General Completeness

The information plan:

- ☐ Clearly describes the product and the audience.
- ☐ Clearly describes the components of the information set.
- ☐ Indicates any internationalization plans, including which components will be adapted or translated, scheduling needs, tools requirements, and file maintenance information. The plan should also name the translation coordinator and the internationalization group contact.
- ☐ Describes the plans for putting information on line, including the form of the online information (online book, reference pages, and so on).
- ☐ Includes the members of the information team and the list of reviewers.
- ☐ Gives topic outlines in sufficient detail so that reviewers can judge the effectiveness of the organization.
- ☐ Identifies tools to be used for creating and managing all components.

Milestones

The information plan lists the scheduling information for each component. The milestones list is complete, and adequate time is allotted for each milestone. Check for the following:

- ☐ The information plan contains all major milestones, including formal technical and editorial reviews, online reviews, field test reviews, and production dates. If the internationalization plans require special reviews, they are included in the milestones list.
- ☐ The schedule uses actual dates, not *TBS* or *When available*. This is particularly important for the final information plan.
- ☐ The schedule allows enough time for all reviews.
- ☐ The schedule allows adequate time for final production.
- ☐ The plan specifies the production schedule for any online materials, particularly online books.

Production and Packaging Requirements

Check that the information plan contains the following production and packaging information for each component and that the specifications conform to the requirements in any company publishing or manufacturing standards:

- ☐ Distribution source
- ☐ Name of manufacturing group contact
- ☐ All component identification numbers, including the order number or part number
- ☐ All project identification numbers, as required by group practice, such as:
  - Discrete project number
  - Manufacturing group control numbers
- ☐ Delivery media: hardcopy, online, or both? On what type device: CD–ROM? Part of product kit?
- ☐ Method of submission
  - Hardcopy repro
  - Electronic
  - Demand print
- ☐ Format (doctype, style)
- ☐ Trim size
- ☐ Estimated page count
- ☐ Estimated art count (including whether art is existing, revised, or new)
- ☐ Use of multiple ink colors
- ☐ Special requirements, such as four-color process art, special screens, or complex tables or examples
- ☐ Binding method
- ☐ Type of cover (flush, tabbed, wraparound)
- ☐ Internal dividers, if any (tabbed, nontabbed)
- ☐ Spine copy, if any
- ☐ Waiver requirements
- ☐ Kitting information

A.3 Online Book Checklist

Use the online information checklist to review books built for the Bookreader application.

General

Verify that the following general points are true:

- ☐ The document is visually attractive, does not make excessive use of alternate fonts, and uses lists, figures, tables, and examples to organize information clearly.
- ☐ The conventions table contains conventions specific to the online book when these conventions differ from the hardcopy conventions.
- ☐ The preface contains a chapter-by-chapter overview of the book, coded with hotspots.
- ☐ Each chapter opening contains a list of first-level heads and their section references, coded as hotspots.
- ☐ The text contains references to all formal (numbered) figures, tables, and examples, coded as hotspots.
- ☐ Cross-references to other sections or chapters are coded as hotspots.
- ☐ Informal elements that exceed the default width of the window (such as unnumbered figures, tables, or code examples) are either left as is or coded as popups. Make the decision to code as popups based on whether the item will lose its usefulness if separated from its discussion in the text.
- ☐ The length of online topics is optimum. A general guideline is that topics should not be shorter than one quarter of a screen nor longer than five screens.
- ☐ All heads (titles) have accompanying text. This ensures that the user sees some text associated with each head when clicking on a topic.
- ☐ If possible, glossaries and listings of error messages are coded so that the user can access a range of terms or messages as a topic from the table of contents. Otherwise, the entire glossary or message appendix is one topic, and users must go through the topic screen by screen.

Checking the Table of Contents

Review the table of contents for the following:

- ☐ Click on all book elements.
- ☐ Click on topic groupings (ranges) within the glossary. Read the top and bottom of the range to verify that all terms are present.

Checking Elements Within the Book

Check for the following hotspots within the book:

- ☐ Cross-references to chapters and sections.
- ☐ Chapter: Correct any place where the hotspot covers only the chapter number, for example, 6, instead of the whole, Chapter 6.
- ☐ Formal and informal tables: Check for overlap of column heads or column copy.
- ☐ Formal figures and tables: Check that the figure either fits in the window or can be seen by enlarging the window or scrolling.
- ☐ Informal figures: Check that informal figures do not overlap the text above or below.
- ☐ Popups: Check that the popup fits in the window or can be seen by enlarging the window or scrolling.
- ☐ Footnotes: Click on each footnote in text or tables to be sure it pops up.
- ☐ Margin icons: Check that margin icons do not overlap the text above or below.
- ☐ Skim the entire display for anything unusual (generally caused by coding errors). For example, double colons may appear after a Note, Caution, or Warning header if the format automatically adds a colon and the writer included a colon in the source file.

Checking the Index

Check the index for the following:

- ☐ Move the mouse through the entries to be sure hotspots exist where appropriate.
- ☐ Check that entries point to the correct locations in text.

What Not to Check

The appearance of a Bookreader book has some variations from the hardcopy version. You do not need to be concerned about the following:

- Appearance of notes, cautions, and warnings. These items may be in bold type on Bookreader but are not bolded in some hardcopy formats.
- Other font changes. For example, some items that are in bold type on line may appear in italic type in some hardcopy formats.
- Spacing problems, unless text or figures overwrite. A possible exception is spacing problems caused by faulty coding practices, such as extra paragraph markers. Be sure your coding does not introduce extra blank lines.
- Appearance of fonts (for example, italic type does not translate well to the Bookreader).

A.4 Questionnaire Checklist

The following checklist gives guidelines to consider as you create your questionnaire. The answer to all the following questions should be Yes.

General

- ☐ Does each question relate to a specific test goal?
- ☐ Are questions technically accurate?
- ☐ Can you compare your questions to existing information?

Participants

- ☐ Do you have a plan for locating potential participants?
- ☐ Do you have an adequate sample of potential participants?
- ☐ Can you justify limiting the sample of participants for security, political, economic, or other reasons?
- ☐ Do you have a plan for getting questionnaires from people who do not respond?

Layout

- ☐ Did you give instructions for how to answer the questions?
- ☐ Do the questions fit on a page or a screen?
- ☐ Do the questions and answers flow vertically?
- ☐ Can questions be clearly distinguished from answers?
- ☐ Do you use transitions to start new lines of questions, to start a new page, or to break up a long series of questions on the same topic?

Language and Focus

- ☐ Is the wording easily understood?
- ☐ Have you eliminated bias from your questions?
- ☐ Have you eliminated all jargon or obscure abbreviations?
- ☐ Have you asked one question at a time?
- ☐ Are questions specific enough?
- ☐ Have you eliminated all questions that are either too specific or too vague?
- ☐ Do the questions require minimal effort from participants?
- ☐ Are your answer categories inclusive?

- [ ] Is the first question clearly related to the main topic?
- [ ] Is the first question easily understood and applicable to everyone?

Order

- [ ] Is the most important question first?
- [ ] Are demographic questions last?
- [ ] Are all similar questions grouped together?
- [ ] Within a content area, are all questions of the same type grouped together?

Implementation

- [ ] Does a cover letter accompany the questionnaire?
- [ ] Did you specify when and where to return the questionnaire on both the cover letter and the questionnaire itself?
- [ ] Have you planned on how to deal with follow-up questionnaires for people who do not respond to the first questionnaire?
- [ ] Did you pretest the questionnaire on a small sample of participants?
- [ ] Do you have a plan for analyzing the questionnaire data?

A.5 Telephone Interview Checklist

Use the following checklist to prepare for a telephone interview:

- ☐ Make sure the first few questions are interesting and engaging to the participant.
- ☐ Make the first questions simple to answer, and include a small set of response categories.
- ☐ Include an open-ended question after the first few questions.
- ☐ Make sure your script for the interview is easy to read and follow. Maintain a conversational tone when you talk; do not sound as if you are reading. For example:
  - Make sure questions, pauses for answers, and surrounding script are marked clearly.
  - Include transition statements and explanatory material to help participants understand the goal of the interview.

A.6 Reproduction Package Checklist

Make sure that the hardcopy reproduction package contains the following items:

- ☐ Camera-ready copy, including repro proofs (repro) and mechanicals
- ☐ For reference cards, a folding dummy
- ☐ Color and screen markup copy if the component uses screens or more than one flat ink color
- ☐ Assembly sheet
- ☐ Final print specification
- ☐ Copy of waiver approval, if applicable
- ☐ Recto/verso page layout sheet

The following sections contain checklists for each of these items in the reproduction package (except waivers).

A.6.1 Repro Proofs Checklist

Make sure that the repro proofs (for hardcopy repro submissions) meet the following criteria:

- ☐ The correct order number (or part number) is visible on the title page and matches the order number on the reader comment pages, print specification, assembly sheet, and mechanicals.
- ☐ The image position is clearly identified on the recto/verso page layout sheet or with trim marks or registration marks.
- ☐ Each page is complete (no missing art or text) and in order.
- ☐ All folios are uniform and in the correct position on recto/verso pages.
- ☐ There are no duplicate pages (possible exceptions are reader comment pages and mailers).
- ☐ There are no smears, smudges, wrinkles, extraneous toner, or excessive toner clustering; pasteups are clean, in the correct place, and correctly aligned.
- ☐ Copy is clearly legible with no broken type or filled-in letters.
- ☐ The copy is of uniform high density both on a page and throughout the document.

- ☐ Copy meets your company's specifications. For example, within Digital, copy must be no closer than 4.8 mm (3/16 inch) to the outside margin.
- ☐ The page count in saddle-stitched books is divisible by 4. Blank pages are added, if necessary.
- ☐ The repro contains the following additional pages, as applicable to your group: How to Order Additional Documentation, Reader Comment pages, Business Reply Mailer, locator pages (if tabbed dividers are used), slipsheets (for example, for spine inserts).

A.6.2 Mechanicals Checklist

Make sure that the mechanicals (for hardcopy repro submissions) meet the following criteria:

- ☐ Printing instructions on the mechanical are accurate and match the print specification and assembly sheet.
- ☐ The type density is black and consistent.
- ☐ Trim marks, crop marks, and registration marks are clearly and correctly shown and back up properly.
- ☐ All elements are aligned correctly and are securely affixed.
- ☐ There is no broken type, dirt, smudges, or adhesive residue on the mechanical.
- ☐ The trim size is correctly marked on base art outside the trim area.
- ☐ The order number appears on every mechanical and matches the order number on the print specification, assembly sheet, title page, and reader comment pages.
- ☐ Tissue and acetate overlays are securely taped to the board outside the trim area and do not cover trim marks, registration marks, or instructions on the board.
- ☐ Tissue overlays are clearly marked for color breaks, ink bleeds, reverses, screens, overprints, traps, and so on.
- ☐ All printed elements (except for bleeds) appear within the trim area and do not intrude into the drilling or binding area.
- ☐ All words are spelled correctly and titles are correct and complete.

A.6.3 Color and Screen Markup Checklist

Make sure that the color and screen markup copy (for hardcopy repro submissions) meets the following criteria:

- ☐ The color and screen markup copy is part of the repro package for hardcopy repro submissions. The markup contains exact copies of the repro proof pages requiring multiple ink colors and screens.
- ☐ Color and screen markup matches the repro proofs exactly.
- ☐ Areas requiring second color or screens are precisely circled with a fine-point pen and do not overlap into other areas.
- ☐ Instructions for the film supplier on the title page and in the margins are clear, legible, and accurate.
- ☐ PMS colors and screens match the corresponding information on the print specification and assembly sheet.
- ☐ Pages requiring multiple colors or screens correspond one-for-one to the pages marked on the assembly sheet.
- ☐ The color and screen markup is reproducible on a photocopier; no color-coded marking system (such as highlighting pens) is used.

A.6.4 Print Specification Checklist

Make sure that the print specification (for both hardcopy and electronic submissions) meets the following criteria:

- ☐ The hardcopy of the final print specification that goes to the film supplier is legible and reproducible on photocopier. This copy is included with the repro package.
- ☐ All fields of information are complete except for the proof approval date field, which is completed immediately upon approving the proof. If no proof is requested, this date can be entered as the reproduction package delivery date.
- ☐ All fields of information are accurate and conform to your company's publishing or manufacturing standards. If the print specification contains information that is an exception to such a standard, you may need to include a hard copy of the approved waiver form.
- ☐ PMS ink colors are completely specified and correct.
- ☐ All specifications agree with other parts of the reproduction package. (For example, the ink colors given in the print specification match the ink colors listed on the assembly sheet and on the color and screen markup copy.)

- [ ] No handwritten notations are included on the print specification. The total number of pages is accurate and matches the total page count on the assembly sheet and repro.
- [ ] The second-color page count matches the color markup.
- [ ] The document order number is correct and is the same as shown on the assembly sheet and the repro proofs, mechanicals, and page layout.
- [ ] The correct drilling and binding options have been selected.

A.6.5 Assembly Sheet Checklist

Make sure that the assembly sheet (for hardcopy and electronic submissions) meets the following criteria:

- [ ] The order number on the assembly sheet matches order number on the following:
  - Print specification
  - Color and screen markup copy
  - Repro proofs (title page and reader comment pages)
  - Mechanicals (including front cover)
  - Recto/verso page layout sheet
- [ ] Ink colors and screen percentages marked in the special page treatment summary on the assembly sheet match the corresponding information that appears in the print specification and color and screen markup copy.
- [ ] The assembly sheet is legible and reproducible.
- [ ] All elements of the document are accounted for on the assembly sheet (cover, spine, chipboard, and so on).
- [ ] Pages marked for color or screens match exactly the color and screen markup copy.
- [ ] The page count for saddle-stitched books is divisible by 4. Blank pages are added at the back if necessary.
- [ ] The total page count is indicated. (It does not include front and back covers, internal tabbed dividers, slipsheets, chipboard, or spine inserts.)
- [ ] The assembly sheet contains a key to second-color markup designation (if applicable) and indicates the number of second-color pages.
- [ ] The assembly sheet contains instructions to shoot repro at 100%.

A.6.6 Film Master Proofs Checklist

Make sure that film master proofs meet the following criteria:

- ☐ The color and screen work indicated on the film master proofs match the color and screen markup copy for accuracy and position.
- ☐ The overlay and integral proofs are checked against the original mechanicals for color accuracy and trapping specifications.
- ☐ All pages that require film supplier changes or corrections are clearly and legibly marked, preferably with a red ballpoint pen.
- ☐ The film supplier's proof approval tracking form is complete and lists all page numbers and corrections.
- ☐ The package is reassembled and returned to the film supplier.

B

Publications Bookshelf

This appendix describes resources useful to all technical communicators. The references are divided by subject areas:

- Standard reference works (Section B.1)
- Writing and style (Section B.2)
- Computer dictionaries and glossaries (Section B.3)
- Multiplatform information (Section B.4)
- Internationalization (Section B.5)
- Indexing (Section B.6)
- Editing (Section B.7)
- Usability (Section B.8)
- Online information (Section B.9):
  - Help (Section B.9.1)
  - Bookreader (Section B.9.2)
- Production and manufacturing (Section B.10)
- Industry standards (Section B.11)
- Engineering process (Section B.12)

B.1 Standard Reference Works

The Chicago Manual of Style. Chicago: The University of Chicago Press, latest edition.

Hodges, John C. and Mary E. Whitten. *Harbrace College Handbook*. NY: Harcourt, Brace, Jovanovich, Inc., latest edition.

Roget's Thesaurus of English Words and Phrases. Available in different forms from different publishers (including Doubleday, Houghton Mifflin, Longman, Penguin Books).

Webster's New Collegiate Dictionary. Springfield, MA: G. & C. Merriam, latest edition.

B.2 Writing and Style

Barzun, Jacques. *Simple and Direct: A Rhetoric for Writers*. NY: Harper & Row, 1975.

Bell, Paula. *Hightech Writing*. New York: John Wiley & Sons, 1985.

Bernstein, Theodore M. *The Careful Writer: A Modern Guide to English Usage*. New York: Atheneum, 1978.

Brockman, R. John. *Writing Better Computer User Documentation*. New York: John Wiley & Sons, 1990.

Brogan, John A. *Clear Technical Writing*. NY: McGraw-Hill Book Company, 1973.

Brusaw, Charles T., Gerald J. Alred, and Walter E. Oliu. *Handbook of Technical Writing*. NY: St. Martin's Press, 1976.

Carroll, John M. *The Nurnberg Funnel: Designing Minimalist Instruction for Practical Computer Skills*. Cambridge, MA: MIT Press, 1990.

Copperud, Roy H. *American Usage and Style: The Consensus*. New York: Van Nostrand Reinhold, 1980.

Corbett, Edward P.J. *Classical Rhetoric for the Modern Student*. Oxford University Press, 1971.

Doheny-Farina, Stephen, ed. *Effective Documentation — What We Have Learned from Research*. Cambridge, MA: The MIT Press, 1987.

Follett, Wilson. *Modern American Usage: A Guide*. NY: Hill & Wang, 1966.

Fowler, H.W. *A Dictionary of Modern English Usage*. Oxford: Clarendon Press, 1965.

Gowers, Sir Ernest. *The Complete Plain Words*. Revised by Sidney Greenbaum and Janet Whitcut. Harmondsworth, England: Penguin Books, 1987.

Haramundanis, Katherine. *The Art of Technical Documentation*. Bedford, MA: Digital Press, 1992.

Mackh, Georgia E. and Lois Johnson Rew. "Using Access Aids to Boost Information Retrieval." *Technical Communication* 38(2), 1991: 210–213.

Reference Handbook of Grammar & Usage. Derived from Porter G. Perrin, *Writer's Guide and Index to English.* NY: William Morrow & Company, 1972.

Rodale, Jerome Irving. *The Synonym Finder.* Emmaus, PA: Rodale Press, Inc., 1978.

Schultz, Susan I., Jennifer J. Darrow, Frank X. Kavanagh, and Marjorie J. Morse. *The Digital Style Guide.* Bedford, MA: Digital Press, 1992.

Skillin, Marjorie E. *Words into Type.* Third edition. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1974.

Strunk, William, Jr. and E.B. White. *The Elements of Style.* NY: Macmillan Publishing Co., Inc., 1979.

Tichy, H.J. *Effective Writing for Engineers, Managers, and Scientists.* NY: John Wiley & Sons, 1988.

Tracey, J.R., D.E. Rugh, and W.S. Starkey. *STOP: Sequential Thematic Organization of Publications.* Fullerton, CA: Hughes Aircraft Corp., Ground Systems Group, 1965.

Weiss, Edmond. *How to Write Usable User Documentation.* Second edition. Phoenix, AZ: The Oryx Press, 1991.

— . *The Writing System for Scientists and Engineers.* Englewood Cliffs, NJ: Prentice-Hall, Inc., 1982.

Williams, Joseph M. *Style: Ten Lessons in Clarity and Grace.* Glenview, IL: Scott, Foresman, 1981.

Zinsser, William. *On Writing Well: An Informal Guide to Writing Nonfiction.* NY: Harper & Row, 1980.

For training in the Information Mapping® method of creating modular information, investigate the following Digital courses:

- Strategies for Developing High-Performance Information (EY-B107E-L0)
- Effective Reports, Proposals, and Memos (EY-8097E-L0)

B.3 Computer Dictionaries and Glossaries

Edmunds, Robert A. *Prentice-Hall Encyclopedia of Information Technology.* Englewood Cliffs, NJ: Prentice-Hall, 1987.

Freedman, Alan. *The Computer Glossary: The Complete Illustrated Desk Reference.* NY: AMACOM (American Management Association), 1991.

IEEE Standard Dictionary of Electrical and Electronics Terms. NY: Institute of Electrical and Electronics Engineers, 1988.

Webster's New World Dictionary of Computer Terms. NY: Webster's New World, 1988.

There are also a number of dictionaries and glossaries available through various standards bodies, including:

ANSI X3.12-1970 (ISO Standard 2382/V, VI), *Vocabulary for Information Processing*

ANSI/IES RP-16-1980, *Nomenclature and Definitions for Illuminating Engineering* (revision of ANSI Z7.1-1967)

ANSI/IEEE 91-1984, *Graphic Symbols for Logic Functions*

ANSI/IES 162-1963, *Electronic Digital Computers, Definitions of, Terms for* (reaffirmed 1984)

ANSI/IEEE 315-1975, *Graphic Symbols for Electrical and Electronics Diagrams*

ANSI/IEEE 610.2-1987, *Glossary of Computer Applications Terminology*

ANSI/IEEE 729-1983, *Standard Glossary of Software Engineering Terminology*

ISO 704, *Principles and Methods of Terminology*

B.4 Multiplatform Information

You may order the following books through your regular ordering channels. The books are also available on the ULTRIX and OpenVMS online documentation CD–ROMs.

NAS Guide to Documenting Multiplatform Products

NAS Guide to Designing a Portable Programming Interface

NAS Guide to Using a Portable Programming Interface

NAS Overview

B.5 Internationalization

Corporate User Publications Group. *Digital Guide to Developing International Software*. Bedford, MA: Digital Press, 1991.

Jones, Scott, Cynthia Kennelly, Claudia Mueller, Marcia Sweezey, Bill Thomas, and Lydia Velez. *Developing International User Information*. Bedford, MA: Digital Press, 1992.

B.6 Indexing

Borko, Harold and Charles L. Bernier. *Indexing Methods and Concepts*. NY: Academic Press, 1978.

B.7 Editing

Boston, Bruce O., editor. *Stet! Tricks of the Trade for Writers and Editors*. Alexandria, VA: Editorial Experts, Inc., 1986.

Dragga, Sam and Gwendolyn Gong. *Editing: The Design of Rhetoric*. Baywood's Technical Communication Series. Jay R. Gould, editor. Amityville, NY: Baywood Publishing Company, 1989.

Judd, Karen. *Copyediting: A Practical Guide*. Los Altos, CA: William Kaufmann, Inc., 1982.

McCormick, Barbara S. *How to Function as a Schizoid Editor*. Washington, DC: Society for Technical Communication, 1977.

Rude, Carolyn D. *Technical Editing*. Belmont, CA: Wadsworth Publishing Company, 1991.

Technical Editing: Principles and Practices. Anthology Series No. 4. Washington, DC: Society for Technical Communication, 1975.

Van Buren, Robert and Mary Fran Buehler. *The Levels of Edit*. JPL Publication 80–1. Pasadena, CA: Jet Propulsion Laboratory, 1980. (Available from the U.S. Government Printing Office)

B.8 Usability

Bond, Sandra J. "Protocol-Aided Revision: A Tool for Making Documents Usable," *Proceedings of the 1985 IBM Academic Information Systems University AEP Conference*, June 1985: 327–334.

Craig, John S. "Approaches to Usability Testing and Design Strategies: An Annotated Bibliography." *Technical Communication* 38(2), 1991: 1990–194.

del Gado, Elisa, Robert C. Williges, Beverly H. Williges, and Dennis R. Wixon, "An Evaluation of Critical Incidents for Software Documentation Design." *Proceedings of the Human Factors Society — 30th Annual Meeting*, 1986: 19–23.

Dillman, D.A. *Mail and Telephone Surveys: The Total Design Method.* John Wiley & Sons, 1978.

Fern, Edward F., "The Use of Focus Groups for Idea Generation: The Effects of Group Size, Acquaintanceship, and Moderator on Response Quality and Quantity," *Journal of Marketing Research*, 19 (February 1982): 1–13.

Hartley, Robert F., George F. Prough, and Alan B. Flescher. *Essentials of Market Research.* Tulsa, OK: PennWell Books, 1983. (Focus groups)

Mills, C.B. and K.L. Dye. "Usability Testing: User Reviews." *Technical Communication* 32(4), 1985: 40–44.

Norman, Donald. *The Psychology of Everyday Things.* Basic Books, 1988.

Sellitz, C., L.S. Wrightsman, and S.W. Cook. *Research Methods in Social Relations*, 3rd ed. NY: Holt, Rinehart, and Winston, 1976. (Structured interviews)

Soderston, C. "The Usability Edit: A New Level." *Technical Communication* 32(1), 1985: 16–18.

Swaney, Joyce Hannah, Carol J. Janik, Sandra J. Bond, and John R. Hayes, *Editing for Comprehension: Improving the Process Through Reading Protocols,* (Document Design Project Technical Report No. 14). Pittsburgh, PA: Carnegie-Mellon University, June 1981.

Whiteside, J., J. Bennett, and K.A. Holtzblatt, "Usability Engineering: Our experience and evolution." In *Handbook of Human-Computer Interaction*, edited by M. Helander, 791–816. North-Holland, 1988.

For training in usability testing, investigate the Digital course Software User Documentation: Designing for Usability (EY-F797E-S0).

B.9 Online Information

Conklin, Jeff. *A Survey of Hypertext*. STP-356-86, Rev. 2. Microelectronics and Computer Technology Corporation, 1987.

Harris, R. Allen and William J. Hosier. "A Taxonomy of Online Information." *Technical Communication* 38(2), 1991: 197–210.

Horton, William. *Designing and Writing Online Documentation: Help Files to Hypertext*. NY: John Wiley, 1989.

Horton, William. "Is Hypertext the Best Way to Document Your Product? An Assay for Designers." *Technical Communication* 38(1), 1991: 20–30.

Nelson, Theodore Holm. *Literary Machines*. Edition 87.1. South Bend: Distributors, 1987.

Nielsen, Jakob. *Hypertext and HyperMedia*. San Diego: Academic Press, 1990.

Shneiderman, Ben and Greg Kearsley. *Hypertext Hands On!: An Introduction to a New Way of Organizing and Accessing Information*. Reading, MA: Addison-Wesley, 1989.

B.9.1 Online Help

- Using VAX DOCUMENT to create help: *VAX DOCUMENT Using Doctypes and Related Tags*, available through your regular ordering channels and on the OpenVMS online documentation CD–ROM
- Creating OpenVMS Help: *VMS Librarian Utility Manual*, available through your regular ordering channels and on the OpenVMS online documentation CD–ROM

B.9.2 Bookreader Books

- *Using Bookreader*, available on the OpenVMS and ULTRIX online documentation CD–ROMs
- *Managing a Bookreader Library*, available on the OpenVMS and ULTRIX online documentation CD–ROMs
- Guidelines for coding Bookreader files with VAX DOCUMENT:
  - *VAX DOCUMENT Producing Online and Printed Documentation*, available through your regular ordering channels and on the OpenVMS online documentation CD–ROM

- *VAX DOCUMENT Using Doctypes and Related Tags*, available through your regular ordering channels and on the OpenVMS online documentation CD–ROM

- Guidelines for coding Bookreader files with the DECwrite™ document processing application:
  - *DECwrite User's Guide*, available through your regular ordering channels or on the OpenVMS online documentation CD–ROM

B.10 Production and Manufacturing

Pocket Pal: A Graphic Arts Production Handbook. NY: International Paper Company, latest edition.

Skillin, Marjorie E. *Words into Type*. Third edition. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1974.

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Cargill, Carl F. *Information Technology Standardization: Theory, Process, and Organizations*. Bedford, MA: Digital Press, 1989.

B.12 Engineering Process

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Glossary

This glossary defines new and unfamiliar terms used throughout the guide.

acceptable ratio for success

In usability studies, the percentage of tests that must be successful in order for the information to meet the usability goals.

assembly sheet

A document that indicates the following information about a component to the supplier:

- Total page count and collation sequence of all elements
- Specific pages requiring special treatment, such as the use of different inks, screens, halftones, and hand assembly

authority list

A record of the correct form of potential index entries, noting correct capitalization, plural forms, and preferred terms.

base level

A logical product unit composed of modules that meet a predefined level of usability. Engineering groups include the dates when base levels are completed in their product plans.

binding method

The method by which separate pages are gathered and held together.

blue line

See **salt print**.

CALS

Computer-Aided Acquisition and Logistics Support. An initiative by the U.S. Department of Defense that specifies standards designed to facilitate the interchange of data in digital form between defense contractors and the Department of Defense.

camera-ready copy (CRC)

Artwork and final copy ready to be photographed for reproduction without further alteration. Repro proofs and mechanicals make up the camera-ready copy.

See also **mechanicals**, **repro proofs**.

CD–ROM

Compact Disc Read-Only Memory. A small, compact disc with much greater storage capacity than magnetic media. The CD–ROM is read by laser rather than by magnetic heads.

chunk

The smallest unit of information that the Bookreader can access for display in a window. Information is grouped according to what the user needs to know. For example, sections, formal figures, tables, examples, and paragraphs are chunks.

See also **topic**.

click

In the DECwindows environment, to press and release a mouse button, as in *Click MB1*.

click on

In the DECwindows environment, to press and release a mouse button when the pointer is positioned on an active object. Use *click on* for operations and selections you make with a pointing device.

close-ended question

A question for which answers are predefined. Test participants choose one or more of the supplied answers.

Contrast with **open-ended question**.

color and screen markup copy

An exact copy of the repro proof pages requiring multiple colors and screens, which indicates the location and color of inks and screens to the supplier. Also known as a *color dummy*.

component

A collection of information modules into a larger entity, such as a book or CBI.

See also **module**.

compound document

An information component containing both text and image data.

Computer-Aided Acquisition and Logistics Support

See **CALS**.

conceptual information

A type of user information that describes the product environment and gives users the context they need for using the product.

ConDist

Common term for the CD–ROM used to distribute software products. The term is derived from the phrase *consolidated distribution*. In fact, both the software and the online documentation discs are the result of consolidated distribution, but the term *ConDist* has come to be associated with only the software disc.

See also **OLD**.

contextual inquiry

An interviewing method that involves questioning and listening to users as they perform tasks in their normal work environment.

See also **structured interview**.

corner stapling

A style of binding in which a wire staple is passed through the upper left corner of sheets of paper to hold them together.

critical incident test

A method of obtaining a user's description of a successful or unsuccessful experience with either a product or its user information.

crop marks

The lines drawn on a photograph or illustration to indicate where the image should be trimmed to remove extraneous areas.

cross-reference

An instruction that directs the user to more detailed or related information. For example, a *See also* cross-reference in an index directs the user to a related topic.

customer glossary

A collection of terms and definitions of company-specific, technical, or application-specific terms whose meanings may not be familiar to the user. A customer glossary is usually placed in the back matter of a component, after the appendixes and before the index.

Contrast with **project glossary**.

demand printing

The printing of a component only when there is a requirement (demand) for it.

design cue

A typographic change or the use of color that reinforces a structural navigational cue or differentiates elements within text. For example, design cues often distinguish examples from text or point to the definition of a term in text.

documentation map

See **information road map**.

drag

In the DECwindows environment, to press and hold a mouse button, move the mouse, and then release the button when the pointer is in the position you want.

film master

A positive or negative image of the camera-ready copy that is produced by the film supplier and matches the camera-ready copy exactly, both in content and quality.

film master proof

A preprint review copy of a document made from stripped-up film negatives. Also known as a *printer's proof*.

See also **integral proof**, **overlay proof**, **salt print**.

film supplier

The company responsible for producing the film masters.

Contrast with **print supplier**.

focus group

A user group discussion guided by a trained meeting facilitator to gather information and opinions about a product or its user information.

formal text element

An entity or structure within text, such as a table or figure, that has a title and, optionally, a number. Formal text elements are always listed in a table of contents.

formal usability edit

A usability study in which a participant uses the product information to perform a task while an observer notes any successes or problems the user has in performing the task.

See also **informal usability edit**, **performance test**.

granularity

The depth of information included in one topic. In Bookreader context, chapters and first-level sections are typically topics. However, depending on your authoring tool, you can increase or decrease the granularity to include more or less information in a topic. Generally, topics are no less than one quarter of a screen and no more than five screens long.

graphics library

Collections of graphics files that are organized to promote consistency in graphics and to save users from recreating commonly used images.

hotspot

In online information, the text of a cross-reference, which, when activated with the pointing device, displays a figure, table, or example in a separate window. A hotspot has a box around it; users can control whether the box is always visible or visible only when they move the mouse over the hotspot.

house style

The set of rules that define an organization's or company's use of mechanics (spelling, capitalization, punctuation, and so on). The house style may also prescribe formatting conventions. For example, *The Digital Style Guide* defines the house style for Digital technical information.

hypermedia

A type of online information in which users access a range of information in a nonlinear way through linked networks of connected information. In the ideal system, users define their own connections between modules of information, which may take different forms, from traditional text and graphics to full color animated videos with sound.

icon

A simplified pictorial representation of an idea, a situation, or an object. For example, a clock face is often used to mean *wait*.

informal text element

An entity or structure within text, such as a table or figure, that does not have a title or number.

Contrast with **formal text element**.

informal usability edit

A usability study in which a participant uses the product information to perform a task and notes successes or problems by annotating the information according to a predefined coding scheme.

See also **formal usability edit, performance test**.

information architecture

A description of the principles of organizing information components into coherent information sets.

information plan

A plan that identifies the scope and contents of a user information project, including the staffing plans, resource needs, and project schedule. The final information plan is an agreement between the information group and funding group about how the product will be documented. Depending on the size of the project, the information plan may include production and packaging information, or there is a separate production and packaging plan.

information road map

A navigational cue, usually in graphic form, that shows users the paths they may take to learn about a product and use the information component or set.

information set

The package of online, integrated, and hardcopy information about a product.

integral proof

A type of film master proof used for documents with four-color process printing. An integral proof is made by exposing separated four-color process negatives onto a special substrate material that gives a facsimile of four-color process printing.

Compare with **overlay proof**, **salt print**.

internationlization

The process of producing a product for worldwide distribution, from the planning stages (influencing product requirements) through product localization.

See also **localization**, **translation**.

Likert scale

A type of close-ended question in which test participants are asked to respond to a statement by marking one of five degrees of agreement: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree.

localization

The process of adapting a product to a local market. Localization may include translation of parts of the user interface or user information.

locator

The page numbers in an index entry.

logging

The process of recording the use of a product or its user information. You can use software, audiotape, videotape, or a user's written diary to record use.

macro

A command that requests an editor or language processor to generate text or a predefined set of instructions.

manpage

See **reference page.**

manufacturing

The process of replicating and distributing a product or product information; the group responsible for replicating and distributing a product or product information.

measurement criteria

A description in a usability testing plan that specifies how you will determine whether or not the information being tested meets its usability goals.

mechanicals

Camera-ready pasteup assembly of all type and design elements, arranged in exact position and containing specific instructions for the supplier for final reproduction.

module

A small, discrete section of information about a single topic.

mouse

A type of pointing device used with windowing systems. *Mouse* is acceptable as a generic term for any pointing device used with a windowing system if you do not need to distinguish between the different types of pointing devices.

navigational cues

Elements of information designed specifically to help users easily find the information they need. Examples include tables of contents, indexes, information road maps, and running heads and feet.

See also **design cue**, **structural cue.**

nongoals

In an information plan, tasks or deliverables that you might be expected to complete but that you do not plan to cover (for example, for lack of time or resources or because there are tasks with higher priorities).

OLD

Common term for the CD–ROM used to distribute online books to be read using the DECwindows Bookreader application. The term is derived from the phrase *online documentation*. The term *ConDist* is often used to refer to the CD–ROM used to distribute software. In fact, both the software and the online documentation discs are the result of consolidated distribution.

online book

A book stored on a CD–ROM and viewed on a workstation or terminal.

online information

Any material in text or graphic form that users can display on their workstation or terminal screens. Online information can take several forms:

- Context-sensitive information built into the user interface
- Different varieties of reference information
- Training modules and computer-based instruction
- Books

open-ended question

A question for which answers are not predefined. Test participants fill in their own answers.

Contrast with **close-ended question**.

overlay proof

A type of film master proof used to show the color separations of a book to be printed using three or more flat PMS ink colors. The proof is made by exposing light through stripped-up negatives onto light-sensitive, colored film gels that record the exact image on the negatives.

Compare with **integral proof**, **salt print**.

perfect binding

A binding style in which all pages are trimmed at the binding edge and held together by glue.

performance objective

A statement in a usability testing plan that describes what you want users to be able to do with the information being tested.

performance test

A test that requires a participant to perform a realistic set of tasks using the product and information. An observer might note data such as the time the user took to complete the tasks and the errors that occurred during task completion.

point of entry

In an index, the topic heading or primary entry for a given statement or concept.

See also **primary index entry**.

pop-up window

A separate window that displays a graphic image. Users display pop-up windows by using the pointing device to activate a hotspot in text or by clicking on a formal table, figure, or example in the table of contents.

primary index entry

The word or phrase that indicates the main topic of an entry in an index.

See also **secondary index entry**.

printer's proof

See **film master proof**.

print specification

A work order that provides a set of manufacturing instructions to the supplier.

print supplier

The company responsible for reproducing multiple hard copies of user information.

Contrast with **film supplier**.

product

An item to be used by a certain set of users. A product may be hardware, software, an integrated system, a process, standard, or conceptual information.

project glossary

A collection of terms and definitions of company-specific, technical, or application-specific terms developed and used by the information and project team members to ensure consistent terminology use.

Contrast with **customer glossary**.

protocol

In usability studies, the transcription of a testing session in which participants talk about a task while they perform the task or use the product information.

protocol-aided revision

A usability study in which a test participant, usually in a laboratory setting, is asked to perform a task and talk aloud while completing the task or using the product information.

questionnaire

A set of questions that can be sent to or used in telephone or face-to-face interviews with usability study participants.

read and locate test

A usability study in which participants try to find information in the component that answers particular questions. The success of the test depends on the users' finding both the correct answers and the correct answers in the correct place.

recto/verso page layout sheet

A set of page-positioning instructions for the supplier, showing the general design of both right (recto) and left (verso) pages. The layout sheet includes trim marks, an identified marking point (like the page number), the component title, and the component part number. Also known as a *matte* or *printer's dummy*.

reference information

A type of user information that gives details about particular entities in the product, explaining how they are used, restrictions on their use, their component parts, and other details that help the user make the fullest use of the product.

reference page

Information that describes one command or facility from the UNIX environment, such as a system call or library routine. Reference pages may be in hardcopy or online form. Also known as a *manpage*.

registered trademark

A trademark that is registered with the United States Patent and Trademark Office. A registered trademark is identified by the ® symbol. Do not use the ® symbol with Digital trademarks.

registration marks

Crosses or other symbols applied to original copy before photography. Registration marks are used for positioning negatives in register or for registering two or more colors or screens in process printing.

reproduction package

The package of materials from which film masters are made. The reproduction package consists of the following items:

- Repro proofs
- Mechanicals
- Color and screen markup copy
- Assembly sheet
- Print specification
- Waiver, if needed
- Sample page layout (recto/verso page layout sheet)

Also known as a *repro package*, *repro pack*.

repro proofs

Finalized type printed on quality paper for use as camera-ready copy.

ring binding

A binding style in which pages are drilled and then kept in binders with metal ring mechanisms.

running foot

A string of text at the bottom of a page that serves as a navigational cue. In Digital books, running feet most often identify the title of a chapter.

running head

A string of text at the top of a page that serves as a navigational cue. In Digital books, running heads most often identify the contents of a section.

saddle stitching

A binding style in which pages are fastened together by wire stapling through the middle folds of the sheets.

salt print

A type of film master proof used for documents with one or two flat ink colors. A salt print is made from stripped-up negatives to show all text and graphic elements to be printed. Salt prints are made by exposing a light source through the film negatives or positives, which duplicates the image that appears on the film. Salt prints are also known as *blue lines*, *blues*, *blueprints*, *Dylux copies*, *ozalid copies*, *silver prints*.

Compare with **integral proof**, **overlay proof**.

script

The prepared set of instructions and questions that you use in an interview with a user.

secondary index entry

In an index, the words or phrases that further specify or clarify a particular aspect of the topic being indexed. The secondary index entry modifies the primary index entry.

service mark

Any word, symbol, design, or combination of those items that is used by service providers to distinguish their services from the services provided by other companies. Use the SM symbol to identify service marks. For example, the DECsite^{SM} mark is a Digital service mark.

See also **trademark**.

spine insert

Information printed on card stock for insertion into the spine insert holder located on the spine of a ring binder. Spine inserts identify the user information located in the binder.

structural cue

A navigational aid that provides an explicit pointer to the organization and content of the user information. Tables of contents, information road maps, and indexes are examples of structural cues.

structured interview

An interview conducted with the aid of a prepared set of questions or a script. Interviews may be held face to face or over the telephone.

style sheet

A list of project-specific rules that supplements the organization's style rules. A style sheet usually covers the following types of information:

- Spelling, capitalization, and punctuation of specific words and phrases
- Abbreviations and acronyms
- Bibliographic conventions
- Footnote information
- Numbers
- Symbols
- Typographic conventions

See also **house style**, **word list**.

summary test

A usability study in which a participant summarizes the meaning of a short passage. Responses are compared with a summary previously prepared by the writer of the passage.

supplier

A company contracted to perform a task, such as making film masters. Also known as a *vendor*.

See also **film supplier**, **print supplier**.

symbolic name

The logical name that you assign to a text entity, such as a chapter, section, or formal figure. When you refer to the entity, you use the symbolic name rather than the entity's title.

See also **formal text element**.

tabbed divider

Pages of a component printed on heavy stock to separate parts of the component. The tabbed extensions make it easier to locate the different parts.

task analysis

The gathering of information about the tasks that a user performs. You may gather data for a task analysis through questionnaires, interviews, and other testing methods as well as through reading project planning documents.

task-oriented information

A type of user information that explains how the user can accomplish a particular task using a procedure or series of procedures.

topic

Generally, a cohesive, self-contained unit of information that describes a complete task, concept, or feature.

In the Bookreader context, one or more chunks of information displayed on successive screens. Typically, chapters and first-level heads are topics.

See also **chunk**.

topic/audience matrix

A grid that maps topics to be discussed in the user information to the different audiences for the product. The matrix concept was developed by Edmond H. Weiss. The matrix is a tool that you can use to organize your product and audience research.

trademark

Any word, symbol, design, or combination of those items that is used by manufacturers to distinguish their products from those of competitors. An unregistered trademark is identified by the ™ symbol. For example, the DECwindows mark is a Digital trademark for a user interface. A registered trademark is identified by the ® symbol. For example, POSTSCRIPT is a registered trademark of Adobe Systems, Inc.

See also **registered trademark**, **service mark**.

translation

The process of changing text from one natural language to another, preserving the meaning of the original language.

See also **localization**.

trim marks

Marks placed on copy to indicate the edge of a page.

trim size

The finished size of a component after it has been bound or folded and trimmed on the top, bottom, and right to meet specifications.

tutorial

A type of task-oriented information intended for users unfamiliar with the product. Tutorials guide the users through a set of basic procedures using predesigned examples.

update package

A collection of loose replacement pages containing changes to information in a ring-bound book. Customers insert the new pages into their binders. Updates may be used when 30 percent or less of the book's page count changes. The update package includes:

- Update notice page with a part number and instructions for inserting the replacement pages
- New title page
- New copyright page
- New table of contents
- Replacement pages with new or revised material marked
- New index

usability edit

A usability study in which participants make specific notes when they have probblems (or success) using the user information with the product to perform tasks. There are two types of usability edits: formal and informal.

See also **formal usability edit**, **informal usability edit**.

usability study

Any test that determines whether information is easy to find, easy to understand, and complete enough to help a user complete a set of tasks.

user information

Any material, in printed or electronic form, that does one or more of the following:

- Trains users to use a product
- Describes the features of the product in a way that users can readily find the information they need to complete their tasks
- Shows users how to make the most efficient use of product features
- Provides conceptual material that helps the user understand how the product works with other products

See also **information set**.

user information team

The individuals responsible for creating the user information for a product. The information team contains individuals who are responsible for writing, editing, graphic design, and production.

vendor

See **supplier**.

wire-O binding

A binding style in which a continuous double series of wire loops runs through punched slots along the binding edge of a component.

word list

An alphabetized list citing the accepted spelling for technical terms and terms frequently misspelled or misused. Word lists may also contain brief notes about usage. Word lists often apply to more than one product.

See also **style sheet**.

List of Trademarks

Bookreader, CDA, DEC, DECUS, DECwindows, DECwrite, Digital, Digital Press, EDT, LinkWorks, OpenVMS, ULTRIX, ULTRIX Worksystem Software, VAX, VAX DOCUMENT, VAX Notes, VMS, XUI, and the DIGITAL logo are trademarks of Digital Equipment Corporation. DECmailer, DECservice, DECsite, and Electronic Store are service marks of Digital Equipment Corporation.

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The Digital Technical Documentation Handbook describes the process of developing technical user information at Digital Equipment Corporation. It discusses techniques for making user information more effective, provides quality assurance checklists, and contains a glossary and a bibliography of resources for technical communicators. In addition to the actual development of user information, the book covers the draft and review process, the production and distribution of printed and electronic media, archiving, indexing, testing for usability, and many other topics of interest to anyone concerned with developing and producing technical documentation.

Also available from Digital Press

The Digital Style Guide
Schultz/Darrow/Kavanagh/Morse
1993, Softbound, EY–J883E–DP

The Art of Technical Documentation
Katherine Haramundanis
1992, Softbound, EY–H892E–DP

Developing International User Information
Jones/Kennelly/Mueller/Sweezey/Thomas/Velez
1992, Softbound, EY–H894E–DP

Digital Guide to Developing International Software
1992, Softbound, EY–F577E–DP

The Digital Guide to Software Development
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