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# Designing Your Help System

The material in this chapter is a guide to only the first step in designing a Help system. It is an important step, but it may not take you as far as you'd like to go. To further your understanding of online design issues, consult some of the many excellent books available on these subjects. ~~For example, look at some books on~~ user-interface design, screen design, graphics design, instructional design, hypertext, and online Help systems. These books go into much greater depth than we can go into here.

This chapter provides useful background information about designing online Help files. It offers general principles and guidelines you can follow to get started thinking about the design choices and decisions you will have to consider when creating your Help system. Specific guidelines for creating Help files consistent

## Designing for People

with Microsoft Windows are in Chapter 4, "Help Authoring Guidelines."

Designing Help systems concerns designing for people, and people are reached by design not only as consumers but as coworkers who participate in the finished design. Every step must be acceptable, understandable, and convincing to enlist the user's necessary cooperation. And the final result must be appealing, both rationally and emotionally. Therefore, the range of individual responses to your design must be taken into account.

One cannot have designed very many Help systems without developing a healthy respect for the uniqueness of individuals, for the complexity of human interaction, and for the usefulness of listening to users and watching their facial expressions while they use your system. Human factors such as usability and consumer advocacy are thus daily challenges in this work, not just industry jargon and academic abstractions.

## What Help Authoring Requires

To create a well-designed Help system requires skill. The skill in Help authoring

is the ability to adapt means to ends. Its working tools are words, pictures, and hypertext links, which are employed in endless ways to produce a variety of effects. Its audience is the user's mind, which must not only be instructed but also kept interested and on track.

Help authoring has its basic skills; it also has its higher effects of style and of individual skill. This chapter can deal with some of the basic skills; the higher skills, however, Help authors can be trusted to discover on their own.

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## A Rhetorical Definition

In designing human interfaces—and your Help system is after all, one kind of interface—it is useful to remember that we are engaged in the business of convincing each other, that we are engaged in a rhetorical process. When the structure, the organization, the text, the graphics, the links, and the various details are skillfully used to produce an intended effect, we call that effect *rhetorical*. In its most general sense, rhetoric is simply a form of communication. In practice, almost every communication is rhetorical in that it uses some device to try to influence the thought and actions of an audience.

The Help author also has a rhetorical purpose, and rhetoric includes the ways in which the Help author's intended purpose and design are accomplished. For every author should work with a specific design in view. That design object may be merely to give users plain information; it may be to teach them important concepts; it may be to change users' opinions about something; it may even be to amuse and entertain them. But whatever the specific design objective, your primary purpose is to make others see the subject as you see it—with the same clearness, the same fullness, the same understanding.

Because designing Help files is a rhetorical process, the Help designer must be clear about the Help file's purpose right from the start. Otherwise, the result may be interesting or entertaining, but not necessarily effective or helpful to users. Therefore, your first task is to identify the objectives you hope to achieve by creating the Help file. A good deal of the early part of the design process should be spent gathering information about the product and target audience and in planning the system.

## Choosing an Audience

Ever since Aristotle defined three kinds of rhetoric on the basis of the three kinds of audiences a speaker can address, the concept of audience has become a permanent part of rhetorical theory. Although we have come a long way from the

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Greek and Roman orators, we are not so far from their tradition. We still perform market surveys and usability studies to determine the correct audience for our software product, and we often begin our documentation plans with a statement about the intended audience for this Help system. But how close to the truth are we when we choose our audience?

Today, technical writing addresses a very diverse audience. We cannot assume that all our users will share the same cultural history, grow up in our social class, attend the same schools, or even share our native language. Even in an English-speaking market, users vary widely in age, experience, computer expertise, education, and interest. They also bring different vocabularies, expectations, cultural backgrounds, and habits to bear.

Your task as Help designers is to explain complex and technical procedures to a diverse audience. As our products reach into international markets, these problems multiply. Thus, the challenge to provide effective Help information to an increasingly diverse audience becomes greater each day.

## Audience Expertise

Despite the difficulties of identifying a target audience, you must still make some assumptions about the people who will use your Help system. Designing Help files requires that you understand your intended audience and anticipate how they will use your information. User-interface designers have spent years analyzing the traits of users and classifying users into various categories. For example, one way to classify users is by identifying their computer skills.

Such schemes may work well for research and conceptual design, but they are hard to apply in practice. In the real world, these schemes may not hold as well because real users tend to overlap two or more categories that the researcher defines. However, this information is still useful because the user's background often determines what kind of information you make available in your Help system and how you present the information.

The following table shows the most common ways to categorize user expertise.

<b>User</b>	<b>Background</b>
Novice	Knows little about computers, little or nothing about your application, and is new to Windows. Novice users are enthusiastic but are afraid to make mistakes. They have trouble getting started, not knowing what is important and

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## Microsoft Windows Help Authoring Guide

what isn't. Novices also lack an understanding of basic skills and terminology. They usually try Help but may be intimidated by its features.

### Intermediate

Has some knowledge of computers, has mastered the basics of an application or a specific area, and has a basic understanding of Windows. Intermediate users make errors but can overcome most through trial and error. They refer to documentation frequently to find answers but lack a complete understanding of most operations. They know where to find Help and are familiar with its basic features.

### Expert

Completely familiar with computer operations, has a good understanding of MS-DOS, and has extensive experience with Windows. Expert, or "power," users thoroughly understand how to use the product. They prefer shortcuts and alternative ways of doing things. They generally use Help only to look up specific information but are comfortable with Help when they do use it.

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Keep in mind that these descriptions are very broad and serve only as a method to compare categories of real users. Also, a particular user is likely to have various levels of knowledge and expertise. For example, the expert in word processors may have no experience using spreadsheets, and the Windows novice may be an MS-DOS expert. When designing the information for your Help file, it may be helpful to work out a more precise description of the target audience.

## Who Uses Help?

Current software products are complex, and complex products require complex Help systems. Even simple applications come with hundreds of pages of documentation, and Help systems, and online tutorials. Despite all this information, frequently they are left standing on the shelf or deleted from the hard disk because people don't read manuals or use Help. The reason they don't is that often the documents don't tell them what they want or need to know.

Because we cannot afford to produce information systems that nobody is expected to use, we must take care to design systems that provide useful information, that accommodate diversity, and that people actually use. That result is attained through effective design.

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## Why Do People Use Help?

As you design your Help file, determine why users will want to read the information you provide. Designing Your Help System 8 3-5 Four common reasons why people use Help are:

- For reminders.

Many users refer to Help to remind them of something they have forgotten. For example, users frequently look up specific tasks and keyboard shortcuts.

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- To learn an application.

Novices and other users often choose Help to learn a new application. Because Help is perceived as part of the application, it is the easiest to access.

- To find specific information.

Many users request Help only when they have a specific question. Often, they have tried to do something on their own first and were unsuccessful.

- To explore.

Users sometimes browse the Help file just to see what's there, following one topic to the next, gradually tracing a path through the information and building an understanding of it. Hypertext systems like Windows Help are especially compatible with this kind of use.

## Why Don't People Use Help?

Almost all Windows-based applications offer Help. Despite its availability, many people have never used Help or have used it only occasionally. Usability studies show that users in test situations try Help once, and if they do not get the answer they are looking for, they do not try Help again. Why?

Three explanations are frequently offered for not using Help:

- Asking for Help often does not provide the right answer.

Users have a low tolerance for unhelpful Help, and if they don't find what they are looking for, they frequently form a negative opinion of Help and never try it again.

- Asking for Help interrupts the user's work flow.

When requesting Help, users must remember their original question,

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find the answer to it somewhere in Help, and then remember the answer when they return to the application.

**Microsoft Windows Help Authoring Guide** Asking for Help is disorienting.

The Help window changes the look of the screen and presents users with its own interface and feature set, which users must master to find information. Frequently, users forget the question that they had when they are forced to learn how to navigate through Help screens.

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These three problems are more severe for less-experienced users. Experienced users are more comfortable with Help. They are less worried about getting back to where they were, they are more likely to remember what they were doing because it is more familiar, and their expectations are more realistic (or more pessimistic, depending on their previous experiences with Help).

## So What Do Users Want?

Most of us are driven by motivations of one kind or another. Users are no different. Their primary motivation is finding answers to questions, solving problems, or learning new skills. Given that, our motivation as designers should be to make certain that users get what they want.

What each user wants varies, but all users seem to share some general expectations. They want:

- Help to function interactively.
- Context-sensitive Help.
- To keep their application in view while they are using Help.
- Help to explain the consequences of their choices.
- Information about Help itself.
- Summary information about the application (quick reference).
- Conceptual information about the application.

Most users want Help to answer very specific questions, but the question depends on what they are doing and what the computer is doing. Their questions are shaped by their immediate tasks. They want Help to be an expert that knows their situation and what information they need to continue.

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## Providing Context-Sensitive Help

Users want context-sensitive Help because it is convenient, saves time and effort, and is more likely to keep them from overlooking something important. Providing context-sensitive Help is one of the best design decisions you can make.

Users expect the computer to be *user-friendly* and to behave the way people do. When they ask for Help, they expect the computer to be aware of what has been going on, and they are therefore impatient with irrelevant Help. In fact, users believe that the computer does “know” but often refuses to help them.

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Users do not expect context-sensitive information from books; they expect to find information in a book on their own. On the other hand, people expect Help to know their context, to interpret their request for Help in that context, and to understand their questions. People’s impatience with Help and their unwillingness to try it again suggests that they expect Help to behave more intelligently than a book, and suggests that books are an inadequate model for Help because they

## Design Issues

lack context sensitivity.

Every craft has its design issues. Many issues are specific and limited in scope, but a few are fundamental and have the widest possible application. In Help, three design issues seem to underlie all the others:

▫ First, design is about making tradeoffs.

You give up one thing to achieve something else. Design principles cannot be considered absolutes like the law of gravity, although frequently you may have to pretend that they are absolutes to achieve a certain effect. For example, if you want your Help file to have a consistent look and feel, you may have to restrict the types of formatting you use in your Help topics.

To create a successful Help file, intelligently apply the principles in this chapter. That means you should use your own judgment about how these principles apply to the Help system you are creating. Naturally, these principles do not pretend to know about your product or your Help system. They merely discuss general principles about designing any Help system. Some principles will be relevant to your design and

others won't. Ultimately the design is yours, and you will have to discover it on your own. These principles can help, but don't fall into the bad practice (which is so common today) of using a design simply because the technology provides the feature. Remember, successful systems test the skill of their designers, not of the technology or of the design principles.

- Second, design is about relating things to each other to achieve a purpose.

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To design with skill involves more than just choosing the correct elements. A topic design may be perfectly correct, perfectly logical, and yet for a particular subject and product it may be a very poor Help topic. In fixing the problem, we do not want to ask what is right or wrong; that question was already answered when the elements were put together. We ask rather what is better and what is not so good for our immediate purpose in this topic.

That is the rhetorical challenge: to find the best means and employ them, to avoid what is feeble or vague or heavy-handed and choose what is strong and definite and balanced. What is constantly present in the designer's mind is this question of figuring out the best way to produce certain effects. Questions of technology and features come in as something that defines limits and methods but that should never overshadow the fundamental rhetorical focus.

- Third, design is the designer's responsibility, not the computer's.

Despite their usefulness, computers are machines and Help tools are tools. Help authors, not tools, are responsible for design. No matter how spiffy the tools become, they won't design the Help file for us. Our job is design; the computer's is technology. But sometimes we forget this. We start to think that our tools will do our work. Tools may give us more choices, but they also demand more from us, because they can't tell us which choice to make.

For example, a graphics program can give us 256 colors to choose from, but it can't tell us which color is appropriate for the picture we are creating. To use graphics software, we need to understand visual communication. Graphics programs can take some of the effort out of producing graphics, but we have to know something about graphics to communicate with these programs. And computers can't help us with that, or even make it easier.



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## A Word About Design Guidelines

Designing Your Help Systems 319

It is worth stressing that design guidelines cannot provide an automatic solution to the design problem. They do not tell designers how to do exactly the right thing or exactly when to do it. Often they are either too specific or too general for a given situation because, to be genuinely useful, they are abstracted from any particular design problem. This reduces their power in any given context, making the guidelines dependent on their user for sensitive and intelligent interpretation. Guidelines are not a stand-alone tool, and they cannot substitute for effective evaluation and iterative refinement within a design. They can, however, provide helpful advice during the design process.

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Guidelines emphasize the designer's need to understand the intended audience and the tasks to be carried out, the need to adopt an iterative design process, the need to gather usability data on user performance, and the need to consider carefully how the guidelines can be applied in specific situations.

Designers cannot use design guidelines alone to achieve an effective design. A guideline cannot recommend one choice over another because each choice depends on many aspects of the situation. Guidelines are often based on informed opinion rather than on established principles. For that reason, guidelines should be viewed as an informal collection of suggestions rather than as an exact science. Designers will have to make many choices on their own and be prepared to test their decisions in the context of their design.

Nevertheless, the benefits gained from following design guidelines should not be underestimated. They provide valuable reference material to help with difficult decisions that crop up during the design process, and they are a springboard for ideas and a checklist for omissions. Used with the proper respect and in context, they are a valuable adjunct to relying on designer intuition alone to solve interface problems.

## Fundamentals

It always helps to start somewhere, especially when the subject is as broad and unsettled as human interface design. While you prepare to design and build your first Help file or your next project, researchers and Help authors everywhere are collecting more data, testing current models, building new prototypes, and revising old theories. Out of this flurry of study and experimentation comes new insights and increased understanding of the problems we face in trying to create better information systems. The following list attempts to summarize the most important design principles to emerge from this collective experience.

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Because these guidelines are general, they apply to the entire Help system:

**Microsoft Windows Help Authoring Guide** If you have input into the development of the application, place most of your design emphasis on making the application's interface clear and easy to understand.

If you can improve the application's user interface, your task in Help will be much simpler, because it is easier to help users along as they encounter small problems than it is to explain a difficult interface. Help should never have to carry the burden of explaining the user interface, but it often does.

- If possible, design the application so that it uses context-sensitive Help.

Most users don't want to interrupt what they are doing just to get help. They go to Help as a last resort when they can't figure out how to do something on their own. The more Help interrupts them and interferes with their getting work done, the more they will avoid Help. Context-sensitive Help provides a smoother bridge between the application and the Help information. Chapter 19, "The WinHelp API," explains in detail how to program an application for context-sensitive Help.

- Whenever possible, simplify, simplify, simplify.

Computer applications are becoming increasingly complex and difficult to use. If the Help system also becomes as complex and difficult to use as the application, users may not use it. Because Windows Help is a very rich, full-featured application, try to lighten the user's load by making the Help information simple and easy to understand.

- Design your Help system for the online medium.

Although you can buy programs that convert printed books into electronic documents, the resulting online documents are no substitute for a well-designed Help system. Online information is fundamentally different from printed material and offers advantages not available in books. Hypertext linking allows for more associative patterns of user interaction with the information. Converting a book to electronic form and then allowing users to page through it has no advantage over a book and the disadvantage of being harder to read and use.

- Provide different kinds of information to accommodate different learning styles and different individuals.

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Most users have two basic questions about software features: What is it? and What can I do with it? The first question can often be answered by providing introductory design information and help with terminology. The second question requires how-to, task-oriented information. Ideally, a Help system should address both these questions as well as provide information that falls into other information categories.

- Provide interactive screens of information that let users participate in learning.

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When using an application, users have some control over what they do. The application offers features, but the user chooses which features to use and when. Help should not take away that freedom of choice by limiting the user's participation. If users are not actively engaged in the learning process, they may lose interest. Help's hypertext facility gives authors ample opportunity to create information that lets users browse and try things out on their own, without strict guidance.

- Group information in meaningful structures.

One of the problems with online hypertext systems is that they have no physical concreteness. Users feel lost because they can't see the size and shape of the information. Presenting the structure and organization of your Help system clearly relieves users from having to figure it out. Grouping information in small, meaningful chunks also provides more ways for users to sort out and identify the parts they want.

- Accommodate different strategies for finding information.

Users require more than one path to the same information because they have different needs and levels of experience. Intermediate and expert users often rely on Search to find information because they feel comfortable with computers and know more or less what they are looking for. Novice users, on the other hand, prefer to browse until they find the information they want. Limiting your Help system to one or the other strategy limits its overall usefulness.

- Rely on the graphical user interface's visual strength when creating your navigation screens.

From about the age of five or six, the visual world becomes a more powerful influence on our understanding of the world than all the other senses. Character-based interfaces and text-only presentations require

users to operate in a highly symbolic world, relying heavily on their memories to execute and repeat actions. Graphical interfaces can use visual cues to their advantage by offering users choices that require only recognition and not memory. Also, because everything in a graphical interface is visual, the Help system seems more natural and less intimidating if it is visual.

- When using graphics in your Help system, apply metaphors from the real world and use them consistently.

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The point of using metaphors is to make something abstract and difficult to grasp more concrete and comprehensible. Users already have a good understanding of average things from the real world. Build on that understanding by choosing metaphors that users can relate to easily. Once you establish a metaphor, don't undercut it by applying it inconsistently or randomly throughout the Help system.

## Hypertext

Windows Help is a hypertext system in which users navigate through two-dimensional space on the computer screen. Hypertext simply means that information (the electronic pages) is linked in such a way that users can read the material nonsequentially. Because hypertext is possible only in the electronic medium, it has no corresponding equivalent in our familiar world of books and magazines. That makes it more difficult for people to catch on to, but more flexible once people do understand how to use it. Its primary advantage over printed materials is that it provides better ways to access information. But access alone is not communication; it isn't even information.

For hypertext to be successful, it must support a well-organized information structure. If the hypertext is well made, users should be able to choose links according to the associations they form when they read the information. Merely adding links willy-nilly to topics does not make a Help file usable. If you get carried away with the idea of hypertext, you will likely make a mess of things. On the other hand, if hypertext links are used skillfully, they can improve the information's organization and make it more accessible to users. They can provide new pathways through information without destroying familiar paths.

Hypertext is good for:

- Encouraging users to explore information.

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Because users are not forced to read the information in any particular order, hypertext allows much more freedom than printed documents. With hypertext, you can design the help system to fit the information instead of forcing the information into conventional formats.

- Providing different ways to access information.

In hypertext, users can choose different paths through the information. They can look at examples, read overviews, find keyboard shortcuts, or view related topics. They can also skip any information they aren't interested in reading.

- Supporting associative thinking.

Hypertext presents a model that is much closer to our natural way of thinking; it incorporates a three-dimensional network of topics and links that we can access by association. So, if designed properly, these networks should be superior to books for storing and accessing information.

- Presenting information in different forms.

Because information exists electronically, it can be used and reused with ease and at virtually no cost. This makes hypertext ideal for accommodating different users and different learning styles. For example, you can organize some topics as a reference manual and another group of topics as step-by-step procedures.

## **Problems**

Hypertext also has some well-known problems:

- Hypertext is disorienting.

The most common problem that users have in hypertext systems is getting lost. This is especially true for first-time users who have trouble creating mental models of the information space.

- Hypertext lacks structure.

Because users can choose their own order, writers must provide a structure and organization that makes exploration possible and yet does not become too disorienting or too limiting for the user.

- Hypertext hides information.

Many hypertexts contain volumes of information, but almost all of it is

hidden from view because it is displayed one screenful at a time. Getting users to the information they want quickly and directly is often difficult.

- Hypertext authors lack experience.

People have been producing printed documents for centuries, but we have little experience with electronic documents and hypertext. And yet, creating a successful hypertext requires skill and experience—if you create meaningless links, you may well end up with an ineffective Help file.

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### Issues

When designing the hypertext structure of your Help file:

- Provide a home for your users.

Because users get lost so easily, they need a place where they can return to recover their bearings. Windows Help provides a Contents button as a standard feature, which you can use as the home topic. Design this topic to introduce the document, show how it is organized, and provide convenient access to the rest of the information.

- Create the illusion of simplicity.

If you create a simple interface and organization for your hypertext, you can provide large amounts of information without burdening the user. However, if your organization is complex and confusing, just a few topics may prove overwhelming.

- Follow the golden mean.

Hypertext encourages excess. Once you get the hang of it, you are tempted to overuse it. But hypertext is only a way to organize information. If you provide too many links in your topics, users may think that the point of the information is not to read it or understand it, but to see where the next link takes them.

- Plan for the future.

Hypertext takes shape as you create it. If it is very large, it may not be long before you have trouble comprehending all the details. Planning can help. Decide how you want to structure the Help file before you begin. Then create templates and placeholder topics to hold the

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information. As you proceed, create links and structure, even though they may lead to dead ends. By the time you finish the writing, you should have most of your **Designing Your Help System** § 3-15

- Practice makes expert.

Hypertext is difficult to create, so it requires practice to become skilled. The best way to learn how to use hypertext is to create a few simple projects and keep trying new ideas until you understand the concepts. Then try creating something more difficult.

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## Navigation

If users are to develop an accurate model of your Help system, their position in the Help file must be clear. They should understand at all times where they are and where they can go. They should also understand the relationship between their present position and the location of other topics. And there should be a clearly defined route to related topics and an easy way for them to move around.

Developing a useful understanding of any system is essential to provide continuity in the Help file. This can be achieved by providing information relating the current screen to previous and subsequent screens. In other words, Help topics should indicate where users are, how they got there, and what they can do to continue. Without such information, users may find it difficult to keep track of how far along in their mental “plan” they are, making them less confident of their actions. This in turn may affect their efficiency and make them more prone to errors.

Information that preserves continuity should come at the beginning and end of each screen. You can facilitate navigation by developing a simple and logical structure that users can understand easily, and by providing location pointers and status information. These can take a variety of forms depending on the context. For example, the Help file could represent each category of information in the Help file with a different identifying icon.

You can facilitate navigation by placing orienting information in each topic that relates it to those preceding it and those following it. In this scheme:

- Orienting information at the top of the screen should relate the current screen to the preceding screen, identifying what the preceding screen was and why the current screen is being presented. For example, an icon identifying the topic category or domain could be

positioned alongside the topic title.

- Orienting information at the bottom of the screen should relate it to the choice and consequences of actions available in the following screen. Placing cross-references at the bottom of a topic gives users choices for where they can go next.

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## Information Structure and Layout

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Before designing a topic layout, you should analyze the information and decide what is the best method for presenting the information. To lay out screen elements effectively, you must understand the structure of the information. Screen design involves using visual properties such as space, position, and size to communicate structural relations.

There are three principal relations between information elements that you can convey by using visual organization:

- Elements may be grouped or associated together (or disassociated).

For example, a caption associated with a specific picture.

- Elements may be sequenced or ordered.

For example, a series of numbered steps.

- Elements may be assigned a relative importance.

For example, a title in comparison with the rest of the topic.

To help you clarify these structural relationships when considering the layout of a Help topic, try the following exercise. Become a user, stand back from the screen, and ask questions such as:

- Which items are of the same kind?
- Which items are functionally related?
- Which comparisons are easy to make? Which are harder?
- Are there items that can be linked together?
- In what order should the various elements be presented?
- Does the order agree with the information presented?
- Which are the most important items?



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- What information is least dominant? Most dominant?
  - Is there a hierarchy of importance?
  - What information stands out most clearly?
  - Do the important structures come across clearly?
  - Can I tell a simple story that summarizes the information?
  - How could the display mislead users?
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Make a list of the kinds of information on the screen, going from the visually most dominant to the least dominant. Now consider whether this order makes sense given the message being put across. If necessary, change the order or emphasis of elements in the topic. Then redesign the topic to convey this new structure.

## Visual Grouping

One of the most important aspects of screen design is visual grouping. Visual grouping refers to factors that cause some parts of an image to be seen as related. In visual terms, users are more likely to see parts that are similar in some way as related to each other than parts that are dissimilar.

An example of how visual grouping is applied to topic design is in the use of white space. Generally you should include more white space around a group of related items rather than between each item. The white space surrounding the items will help clarify the group structure of the information.

Visual similarity includes these factors:

- Size
- Type style or shape
- Spacing
- Alignment
- Color
- Brightness

In contrast, visual separation is based on a dissimilarity of these factors.

## Visual Order

Determining the order of information in a topic depends on the message you want to convey. Usually, this order is a straightforward sequence from top to bottom, but it may involve more complex movements. In fact, you can influence how users read the information by the way you order items in your topic layout. Guiding a user's eye to the most important information is one of the key objectives you have in screen design.

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When first looking at a topic, users generally scan the whole layout to get an overall impression. After that, users tend to focus on elements that have emphasis. The following list summarizes these tendencies. Keep in mind that these are "tendencies" and not absolutes:

- Users tend to scan to the left and upward.
- Users tend to scan in a clockwise direction.
- Users prefer horizontal scanning to vertical scanning.

## Issues

- Instructions, cues, and important information should appear at crucial points in the order.

When deciding where to place information in the order, keep in mind that screen areas have this order of importance: left is more significant than right, top is more significant than bottom.

- Tell the story visually.

Place items in the topic so that the information "tells the story visually." But take care not to let primary elements appear in too many places, or the topic may begin to look chaotic and confuse users.

## Visual Hierarchy

Very little information exists in which all the elements have exactly the same importance, and there is no visual hierarchy. More commonly, information has a definite hierarchy of importance, in which some elements receive more emphasis than others. This is especially true in instructional materials like Help.

The effectiveness of the various means of emphasis derives from their perceptual

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qualities. Visual emphasis relies to a large degree on the effects of contrast. If one item is larger than the rest, it stands out. But if all but one of the elements are large, then the single small element is the most prominent.

Designing Your Help Systems 3-19

There are many ways to create emphasis; the important thing is to set up a consistent visual hierarchy in your Help topics by determining which elements to emphasize and to what degree. These principles can help you do that:

- Visually emphasize the most important items in a topic.

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This will direct the attention of the user toward what matters most. For example, using a topic title in a larger type size and placing it at the top emphasizes it over the rest of the information in the topic.

- Capitalize on visual conventions and expectations.

Emphasis is influenced by what is usual. For example, because most Western people read from left to right and from top to bottom, information placed at the top left receives more emphasis than information at the bottom or right part of the Help window.

- Make an element different from the elements surrounding it.

The number of elements and each element's position in the topic affect how it is perceived in the visual hierarchy and what you must do to give it more emphasis. For example, a word buried in the middle of the topic requires more emphasis to bring it out than a heading at the beginning of a paragraph.

- Be careful not to overuse emphasis.

Too much emphasis—or too many words emphasized in too many ways—can create the opposite effect from the one intended. Instead of getting the message, the user may simply ignore it. Also, if you try to emphasize too much, you may make everything roughly equivalent and lose all emphasis.

### **Creating Emphasis**

There are a number of techniques for making visual distinctions between elements and emphasizing those of particular importance:

- A different typeface or type style, such as bold or italic, is the most common way to highlight words and phrases.

- Type size can be used to distinguish and emphasize headings—the larger the size, the greater the importance.

- Capitals can be used for special words and computer terminology, such as filenames, but should not be used for body text.

- Space can be used to separate items—the greater the distance between items, the greater the distinction.

- Indenting can be used to indicate subordinate information.

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- Subheadings not only separate items but also summarize their content.

- Color is a very powerful means for distinguishing and highlighting elements; however, it should be used with care.

- Reverse video is very distinctive. However, because it is used in most applications to indicate items that have been selected, it may be confusing if it has a different meaning in the Help file.

Certain forms of emphasis are especially powerful—color, for example—and should, therefore, be used with particular care. Try to establish a hierarchy of importance using these techniques, and then employ that hierarchy consistently throughout the Help file.

## Consistency

Consistency is fundamental to effective screen design. It contributes to usability in a number of ways—it facilitates learning, lessens the number of errors users make, and helps users develop an accurate model of the system. Of course, it is rarely possible to be completely consistent within a Help file, so you will often have to determine your priorities and make tradeoffs accordingly. For example, you should not be rigidly consistent if the decision results in an awkward design, when an inconsistent design would achieve the goal more efficiently.

The following guidelines can help you with consistency:

- If an element is functionally different, make it look different.

For example, because they clearly have different functions in Help, jump and pop-up hot spots are differentiated by the type of underlining that they display in the hot-spot text.

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- Use topic elements consistently throughout the Help file.

The learning process is facilitated if the user can easily grasp the relationships between elements within the system. This can only occur if you use consistent terminology, provide consistent behavior for controls, and so on. For example, if users are to choose a blue circle that indicates that a tip is available, consistent use would mean that the blue circle always provides a tip and that no other cue would provide the same tip.

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- When consistency isn't possible within the entire system, try to be consistent within a smaller domain.

For example, if a certain information category, such as step-by-step procedures, requires you to vary from some principle established elsewhere in the Help file, at least be sure to use the feature consistently within all the topics of that category.

- Try to be consistent with features and expectations derived from other related systems and applications.

If there are large inconsistencies between related systems, the user's ability to generalize from one to another is reduced. It may also cause them to make more errors because they may assume that actions taken in one application have the same effect in other, related applications. Therefore, if your Help file deviates from Windows or Windows-based applications, users may find it particularly difficult to use and learn. For example, users expect to be able to click grey, 3D buttons, so don't include buttons in your Help file unless they have a similar function.

- If a topic or action is used inconsistently, provide some instruction or warning to users.

For example, if screen shots of the interface are not normally hot, and you include one that is, tell users that this particular graphic includes hot spots.

## Foreground and Background

In any image, some parts tend to be seen in the foreground and some in the background. In a graphical user interface, active and inactive windows create the illusion of foreground and background. For that reason, you can use windows to separate different kinds of information, especially where you want to create content that is somewhat independent from the main Help window.

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When placing information in Help windows, use the following guidelines:

**Microsoft Windows Help Authoring Guide** Place subordinate information in pop-up windows.

Because pop-up windows are displayed temporarily (until the user takes any action), they create less separation between the information in them and in the main Help window. That makes them ideal for displaying subordinate and supplementary information.

- Place independent information in secondary windows.

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Secondary windows share many of the same characteristics as the main Help window. For one thing, they can be displayed or dismissed independently of the main window. That makes them ideal for holding information that is tangential to the content in the main Help window. However, because secondary windows can exist with or without the main window, they should only be used when the information displayed in them is truly independent from the content in the main Help window.

- If you use secondary windows, consider carefully the size and relationship they have to the main Help window.

Users will likely have other windows open besides Help windows. Too many windows on the screen at one time can confuse and disorient users. There is considerable usability data indicating that user performance deteriorates as the screen image becomes more complex. Users have a harder time finding the information they want, and they make more errors. In general, try to limit the amount of space that additional secondary windows occupy to less than 25 percent of the active screen area.

## White Space

White space is the designer's canvas. It is the area in which you display your message. It also creates the information boundaries that users rely on to recognize the message. White space includes both negative and positive values—negative space is the background, or the part we seem not to see; positive space is the foreground space that lies at the center of attention and dominates.

In online designs, space is two-dimensional, even though many elements simulate a three-dimensional space. Two dimensions have only length and width, but you can use certain techniques to create the impression of depth and volume.

Learning how to use white space is one of the most important aspects of screen

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design. The key to using white space depends on its ability to group and separate elements into recognizable symbols and images. An easy way to understand this principle is to consider spacing in type. Normal spacing in type allows our eye to recognize the symbols (letters) that form understandable words, as in this example:

GO OUT TONIGHT

If we remove the normal white space between letters, we cannot easily understand the symbols as a message:

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GOOUTTONIGHT

In the same way, the proper use of white space in your topic layout will help users recognize and understand the message. To create a good layout, make sure that all topic elements—topic title, text paragraphs, pictures, white space—create understandable images. A topic will look crowded and cluttered if too many elements occupy the space and prevent closure; it will look open if the space is balanced and generous.

## Margins

Margins are the blank areas surrounding the information in a topic. In normal screen design, you have four margins to consider: top, bottom, left, and right. There isn't much you can do about the right and bottom margins in Help, so the left and top margins should be your primary concern:

- Left margin—with overlapping windows on the screen, text from one window can become confused with information in another window because there is only a thin dividing line (window border) separating the two. This can make the screen look unnecessarily cramped and cluttered. An ample left margin helps separate Help text and graphics from information in other windows.
- Top margin—the Help window has three horizontal layers above the information that also attract the user's attention. To prevent Help menus and controls from overwhelming the display and distracting users, create a generous top margin.
- Balance—try to achieve a balance between margins. In other words, if you increase the left margin, increase the top margin proportionately. That way the information won't appear crowded into one area of the screen.

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Microsoft Windows Help Authoring Guide

- Consistency—when creating custom left and top margins, employ them consistently throughout the Help file. Otherwise, topic elements will appear to “jump around” on the screen as users move from one topic to the next.

## Color

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Color can enhance the Help file by adding interest and variety to the information. Unfortunately, color can also create problems that seriously limit its usefulness. Generally, color is good for grouping similar things and emphasizing elements but not good for conveying meaning. Because it is very effective, use it with care. Color can easily overpower the visual presentation of the Help topic and distract the user by drawing attention to itself and away from the other information. Color should complement a good layout rather than compensate for a bad one.

Color is good for:

- Showing relatedness between things.

Users tend to think of all the red items as being related to each other, all the blue items related to each other, and so on.

- Creating emphasis and showing visual hierarchy.

Color is a strong visual cue and an effective means of emphasis. Because it attracts the eye, a user's eye will always move to the colored item in a black and white field. Bright colors attract the eye more than dull colors. That means colored elements automatically receive emphasis. Handled with good taste and judgment, color can help inform users and direct them to important information. However, when it is overused or used unwisely, color creates the wrong emphasis, and the topic may become difficult to read. Before you consider using color for an element, determine whether you want to give the item that much emphasis in the topic.

- Showing visual ordering, if you use the spectral order.

In other words, users see red, orange, yellow, green, blue, purple as being in order.

Color is not good for conveying specific meanings. Users can easily differentiate



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colored items from noncolored items, but they cannot easily associate a color difference with a particular meaning. For example, if you use color to symbolize different functions in the Help topic, users may learn that symbolism very slowly—green equals jump, red equals note, blue equals topic title, and so on. More than three text colors also make it difficult for users to keep track of the different meanings assigned to color.

## Issues

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- Use color sparingly, and only when it has a specific purpose in the topic.

Because color emphasizes, that emphasis can either enhance the information or detract from it, depending on how it is used. If color is used to make the topic look pretty, chances are it will also detract from the information rather than enhance it. So never use colors just for their own sake.

- Do not combine too many colors in the same topic.

Like other forms of emphasis, if color is overused it loses its impact. Two or three colors are often sufficient. More colors can be used if they help clarify the logical structure of the information, but too many colors destroy the unity of the display and decrease readability because the user's eye jumps to the different colors. If black is used for body text and green for hot spots, that leaves only one additional color choice for text.

- Use color consistently.

For example, if green is used for hot spots, it should represent “hotness” throughout the Help file, no matter where it occurs.

- Do not use colors in ways that contradict their conventional meanings.

Green, for example, would not be a good choice for error messages. Remember, too, that meaning also depends on particular contexts: although green suggests ripe when talking about certain vegetables, it signifies untested when talking about a person's experience.

- Use brighter colors for more important information.

Color has a luminance hierarchy that results in brighter colors appearing more dominant. For example, on a dark background a

hierarchy of importance is white, yellow, cyan, green. If followed, the luminance hierarchy can complement typographical variations. If this hierarchy is ignored, the effects are very noticeable and potentially confusing. Distinctions between items that are not intended to imply an order of importance are best made by choosing colors close together in the hierarchy, for example, white and yellow.

- Choose a text/background color combination that maintains a high contrast between the characters and the background.

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Letters on a background of the same luminance are extremely difficult to read because the eye cannot bring an edge into focus. On the other hand, a high contrast facilitates focusing. However, take caution when using dark text on a bright background. The contrast may be good, but the brightness of the display can make reading unpleasant.

- Be sure your design is acceptable in black and white.

Some users have monochrome monitors, so you should not rely exclusively on color for visual effects. In general, low-contrast colors do not transfer well to monochrome and grey-scale monitors. When displayed on grey-scale monitors, colors are converted to blacks, greys, and whites. That means you must choose colors so that the contrast between items is high enough to create contrast on a grey-scale screen. Otherwise, some screen elements may become invisible or very difficult to see.

## Text

Typography is perhaps the most widely discussed area of graphic design. And not surprisingly. We have been using books for centuries, and all the while we have been improving and changing them. Much of the knowledge that has accrued in book design can be applied to the design of electronic text, but certainly not all of it. These days, Help designers must be as familiar with electronic text as book designers have been with paper and print.

Text is something that all Help systems use. In fact, because of limitations—cost of goods, time, resources, display technology, and so on—text continues to be the dominant information element in Help files. For that reason, pay careful attention to the design issues that text raises. For example, how much text should you write for one screen? Which font should you use? Should you use color? Can tables and lists present information effectively online?

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Text is good for:

- Conveying precise information. Designing Your Help System § 3-27

It is often impossible to judge visual parameters precisely, for example, the exact distance between two cities on a map. Consequently, where accuracy is required, numbers and words are more effective. (For example, maps translate their visual scale into numbers, “one inch equals 100 miles,” to be more precise.)

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- Dealing with abstract notions.

Pictures are not often used for depicting abstract ideas, such as “the meaning of happiness,” where traditionally words are much better suited.

- Expressing logical deductions.

Pictures and diagrams can only roughly approximate logical relationships. Words and mathematical notation are usually superior. For example, Venn diagrams are a useful way to illustrate the principles of set theory, but they are not the primary means of expressing those ideas.

However, text can look dull and unappealing when used alone. A “wall of text” is especially disastrous online because users become easily overwhelmed by the information. Text-only Help files also may present problems for poor readers.

## Legibility and Readability

For text, the most important factors are legibility and readability. Legibility describes how easily the individual letters and words can be differentiated from each other. Legibility involves many factors, but the most important factor is contrast. The higher the contrast, the more legible the text (if other factors are also considered). Most books achieve high contrast, and thus legibility, by printing black text on white paper. But printed materials also use inverse printing and color to gain high contrast—white text on a black background or dark red text on a yellow background, for example. The same factors apply on computer screens, and so most word processors display black text on a white background. Colored text is also legible on computer screens if there is sufficient contrast.

Readability is similar to legibility but refers more to the ease and comfort with which the text can be read. Obviously the text has to be legible to be readable. But other factors affect readability. For example, the text may be perfectly legible

but not very readable if the line lengths are too long or the spacing is too crowded. Another factor of readability is formatting. Users have more difficulty reading text if it has a lot of formatting changes. Too many colors or frequent formatting changes make the information less readable.

When reading any material, people organize the material by categorizing the various text elements according to their importance. They usually do not read all the words with equal attention and in the same order in which they are presented. You can make reading considerably easier if the text elements are visually distinct and consistent within the Help file. For instance, white space provides visual relief for users and helps them assimilate the information; it also signals divisions within the material.

The ease with which users can read text depends upon several factors:

- Its physical size

A 10-point font is sufficient for most screen fonts.

- The space between lines (known as leading)

Paragraph leading should facilitate reading by emphasizing each line of text. If lines are too close together, they can disrupt reading because of interference from the lines above and below the line being read. Adding sufficient space between lines improves the perceptual grouping of characters into rows.

- The length of the line

How much leading you use depends on the type size and line length. For example, the longer the line, the more leading it requires because the user's eye has a greater distance to travel when finding the start of each line.

- The user's distance from the screen
- The angle at which the screen is viewed

Most of the time you can control only the first two factors, so pay particular attention to them to create the most readable text possible.

## Issues

- Paragraphs should generally be indicated by white space between them rather than by indenting the first line or by using other print

conventions.

- Left justification is the simplest and usually the best way to format the paragraphs because everything in the Help window is anchored to the left window border.

Right justification and center-justified text can be effective for single paragraphs or other special-case text, but it is not advisable for body text because it produces a ragged left margin that disrupts reading.

- Different reading tasks demand different reading styles, and the presentation should be compatible with the required style.

Is the user expected to read and remember the text, to locate particular items within it, or to react to some items without needing to remember them? For example, standard paragraph formatting is consistent with the user's previous experience and is simpler to produce. However, if the user has to pick out one item from a set of items, the items should be displayed as a list.

- Whenever possible, avoid cramming too much information into a Help topic.

Help text is a form of hypertext, or nonlinear writing. Users move forward and backward through a series of connected Help screens. Instead of flipping pages directly; they flip them indirectly, on the display. Hypertext is usually more effective if you present text in smaller amounts, rather than in long chapters and sections as in printed books.

- Generally, divide the information into small chunks, each topic occupying roughly the size of the Help window.

This means a topic may consist of 100 words, 50 words, or whatever amount is required to create a complete idea. How much text you place in a single chunk depends on several factors: the content of the information, the size of the Help window, the font size, and the amount of white space. Always keep these factors in mind when considering the amount of text that you include in a single topic. Do not follow print-based conventions such as filling the page with type; these conventions usually have little or no meaning when creating Help files.

## Lists

Lists organize information using vertical and horizontal alignment, much like tables. The alignment provides a recognizable structure that tells users the information is related. It also tells them to read vertically, starting from the top of the list.

Online lists aren't significantly different from printed lists. You should consider the effects of using indents and nested lists, however. These techniques may work better on the printed page than they do in the Help window. Creating too many margins using indents may make the information more difficult to read. Usually white space is a better alternative than indenting for differentiating lists from the rest of the topic. Use the following guidelines when creating lists:

- If a number of items form an ordered group, place them in a list.
- Because lists define groups, use visual formatting that reinforces and clarifies the list's structure as a group.

For example, use an equal amount of space between list items and include plenty of white space around the list. Do not introduce different formatting elements within the group, such as bold or color, that differentiate elements and weaken the group's internal structure. In other words, always treat all the items within the group the same.

- Avoid using lists within lists, or nested lists, because they may be ineffective online due to screen limitations.

You have more control in print because the page is fixed and is larger than the average Help window. A long nested list in a small window may lose its structure and look like blocks of text stacked irregularly on top of each other.

## Tables

Like lists, tables structure information into recognizable groups. However, tables provide more control over the information and allow greater flexibility in how the information is presented.

Generally, information within a table invites users to scan in both directions—horizontally and vertically. Therefore, how you design the table depends on how you want users to read the information. In other words, you must decide which orientation—horizontal or vertical—best suits the information. Vertical alignment in a table suggests that the items within the column are the same type (related by

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information category); horizontal alignment signifies that all items in the row have the same functional relationship to each other.

#### Designing Your Help Systems 3-31

In printed documents, tables are always a fixed size. In Windows Help, however, you can create relative tables. A relative table is one that adjusts the width of its columns as the user resizes the window. Because the column widths resize dynamically, use a relative table only if you want the information to wrap. If the information in the table requires a more controlled presentation, create a nonwrapping table and have the user scroll to see hidden information when the window is too small to see the whole table.

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Use the following guidelines when creating online tables:

- Take care to ensure that the table reads well horizontally.

Although all tables have vertical columns, most tables are read horizontally.

- Use white space or thin rules to emphasize one orientation over another.

When designing horizontally read tables, use ample space between rows but only enough space between columns to separate them. Don't spread the columns out to fill the screen.

You can also emphasize a table's orientation by adding thin rules between columns or rows. Thin horizontal rules can help draw the user's eye across the page. However, don't use vertical rules unless users should read the table vertically; the vertical lines draw the user's eye down the screen and make horizontal reading very difficult.

Using slightly different colored backgrounds for columns and rows also emphasizes the table's orientation but is generally a bad idea because the color may destroy the table's structure and interfere with readability.

- To distinguish the table heading from the table text, use a formatting attribute such as bold.

Most tables use headings to show the table's orientation and to label the information in the columns or rows. If information in the table is read in both directions, you may want to use both row and column headings.

- Try reversing the order of the table columns or wrapping wider items to two lines if the information you put in tables varies in width, creating irregular spaces or very large gaps between columns.

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These techniques should help make elements within a column more evenly matched.

**Microsoft Windows Help Authoring Guide** If a table is very long, you may want to group rows within the table by adding white space between the groups or by dividing the long table into two or more tables.

However, this implies that the information within the table can be divided into logical groupings.

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▮ If you must mix text and graphics in unusual ways in your Help file, consider using tables to create the effects you want instead of using indents, tabs, or other text-based formatting methods.

Computers do not arrange text and graphics the way you might for a book or magazine—by cutting and pasting things where you want them. Instead you have to rely on the word processor to position these elements in relation to each other. Tables provide a good solution to the problem by letting you place text and graphics precisely in a Help topic.

## Graphics

There are many reasons to include pictures in your Help file. For one thing, they can contain a great deal of information in a small space. But pictures often pose the biggest problems for designers because they present so many possibilities from which to choose—shapes, sizes, colors, patterns, styles, and formats. And, of course, adding graphics requires artistic talent. Fortunately, you can hire talent. But you still have to answer the tough design questions.

Like text, a picture is only effective if it fulfills its intended purpose. Consequently, you should determine a picture's purpose before using it. The challenge is to provide graphics that not only look good but that inform and communicate as well. Of course, pictures can have many different functions, more than just the few mentioned here. In fact, a single picture is likely to fulfill several different functions at the same time.

Graphics are good for:

▮ Focusing attention and highlighting important points.

In general, the visual sense is pre-eminent in information processing. Pictures catch and focus users' attention. Consequently, users tend to assign particular importance to visual elements. Design your pictures so



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that they draw attention to essential information, especially if the information is unfamiliar to users, differs significantly from what users expect, or is likely to be misunderstood.

- Stimulating ideas and adding interest.

Pictures have an immediate visual impact. Unless they are extremely flat, they are more interesting than plain text. Most users would rather look at pictures, especially if the pictures are clearly displayed. Pictures also add interest to the information and relieve the visual monotony of text.

- Instructing and clarifying.

Pictures communicate certain kinds of information more effectively than text and so are essential in many instructional materials. However, because pictures can dominate the information, it is important that they perform a specific function in the overall design of the Help file and that they do not prevent users from grasping other elements in the topic. Avoid using pictures purely as decoration, because decorative graphics distract users from the content.

- Showing complex interrelationships, patterns, trends, and shapes.

Human vision is adept at recognizing and identifying visual patterns. For that reason, relationships that are confusing or obscure when expressed verbally frequently become straightforward and clear when expressed visually. Graphics, therefore, are useful where the information requires the user to understand complex relationships between items.

- Explaining and describing visual objects.

Pictures express visual and spatial concepts better than text, especially when those concepts involve physical actions. By resembling the things they depict, pictures take advantage of our ability to recognize objects. Text, on the other hand, must describe visual objects and “paint a picture in words.” In many cases, a picture is more effective. For example, it is easier to show the honeybee’s “dance” than it is to describe it.

- Directing and improving actions.

Pictures increase the speed at which users carry out actions because they don’t have to understand complex processes. The Windows graphical user interface is a good example of how visual elements can

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make many tasks easier and faster to perform than the same actions in a nonvisual environment like MS-DOS.

**Microsoft Windows Help Authoring Guide** Remaining meaningful when reduced in scale.

Usually, you can get better results when you reduce a graphic than you can with text. For example, the overall shape of a bar chart is largely unaffected as you make it smaller, whereas text quickly becomes unreadable as you decrease the type size.

- Providing access to other information (hypergraphics).

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When creating hot spots, pictures offer an interesting alternative to text. For example, you can create a graphical table of contents for the Help file, to show how the topics fit together and what links to what. Then, you can make the graphic hot and let users select items directly from the graphic.

- Persuading and influencing users.

Political cartoons provide a good example of how pictures can be used to influence an audience toward accepting some idea or opinion.

- Conveying information across linguistic boundaries.

People can understand the ideas and information in pictures much more easily than they can understand a foreign language. In fact, some pictures and images are almost universally understood. Although pictures can transcend language barriers, they may be interpreted in different ways by different cultures. Therefore, if you plan to distribute your Help file to non-English speaking countries, carefully consider international issues when creating and selecting your pictures.

## Issues

Graphics take considerable time and effort to create and require much more disk space to store than text. They also display differently on monitors with different screen resolutions. If they are very large, the graphics may take a long time to appear on the user's screen.

Of course, pictures can be used in many different ways for many different effects, and each use presents its own design problems and issues. Nevertheless, the next few sections provide a few guidelines to consider, including:

- Consider the overall quality of your graphics.

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When creating pictures, consider what users expect. Because the pictures appear on an electronic screen, users may expect the pictures and screen design to fall ~~Designing the Help System~~ standards set by television and computer arcade games. It is important to try to meet users' visual expectancy because poorly designed images can cause users to lose interest.

- Don't use too much detail in art that is shown at a reduced scale.

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Images with too much detail at a small scale may lose that detail when shown on lower-resolution monitors. Instead, try using a larger scale but only part of the picture to focus on the relevant information.

- Keep pictures relatively simple.

Online pictures are displayed at a lower resolution and in a smaller area than printed graphics. So reduce the number of details and parts in each picture and avoid fine lines and tiny text (unless you *want* illegible text). And be careful not to confuse simple with badly drawn pictures. Simple pictures focus the user's attention on important aspects. For example, the silhouette of an object may be sufficient for users to recognize it.

- Avoid distorted views and unusual perspectives.

If possible, show a conventional three-dimensional view in your pictures. Realistic images are easier to recognize and understand than flat abstractions, unless the picture is a diagram or schematic.

### **Picture Types**

Pictures include screen shots, icons, illustrations, line drawings, diagrams, graphs, cartoons, and photographs. Different picture types are used for different purposes. The type of picture you use depends on how you use it. Consider these two guidelines:

- Try to match the appropriate picture type to its function in the Help file.

For example, if the purpose is to motivate, attract attention, excite, or amuse, colorful illustrations are likely to be more appropriate than screen shots.

- Before choosing a particular picture type, consider its strengths and weaknesses.

For example, diagrams exploit the two-dimensional space of the screen, so they are suitable for portraying information that is already spatial, depicting physical and conceptual processes, and explaining structures or relationships. Therefore, diagrams would be a very good choice for a map, the human nervous system, or a family tree. Because diagrams rely on simplification for their effectiveness, they should not look realistic. The concepts matter most. Highly realistic images are likely to make the user think that the diagram represents an object when in fact it demonstrates a process or concept.

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### **Contrast and Emphasis**

In all communication, some elements have more emphasis than others. Designers use various devices to improve a picture's impact. One of the most important is contrast. In design, contrast is used to compare two elements to show differences. There are many ways to use contrast in your pictures to add emphasis. For example, you can create contrast using:

- Shape

Shapes define the function and dimension of space. They can also create depth. Most designs use three basic shapes: four-sided, triangle, and circle. By exaggerating differences in shape, you can add emphasis. For example, using one irregular shape among a group of regular shapes improves contrast and makes the irregular shape more important.

- Size

If there is low contrast in size (all the elements are roughly the same size), all the information will have the same emphasis. Making one of the elements larger or smaller than the rest improves the contrast and highlights the element that is different.

- Texture

In the physical world, objects and surfaces have texture (rough or smooth). Our eyes can sense texture visually if the picture uses texture. For example, you can use simple shading techniques to create shadows and give a sense of dimension and texture to an otherwise flat drawing.

- Direction

Lines and shapes create movement, show direction, and provide emphasis. Using vertical and horizontal movement in your layout can

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help guide the user's eye to important information.

- Color and tone

Color uses principles of tone to create contrast. Tone refers to the range of light values—from white to black. Tones can be dull, like brown, or they can be bright, like yellow. To create emphasis, you can contrast bright colors and dull colors, or you can use complementary colors, such as red and green.

Designing Your Help Systems 3-37

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### **Combining Text and Graphics**

Users learn better when information is presented in both words and pictures. Here are some guidelines:

- Place pictures as near as possible to the corresponding text.

If you present the text and graphics on separate screens, provide a simple and clear method for displaying the picture. Because jumping to a new topic is more complicated for the user, it is usually better to place the picture in a pop-up or secondary window.

- Use visual grouping to indicate the relationship between the text and graphics.

The ease with which users can associate a picture with text is dependent upon the visual grouping between them. Learning to see the visual structure requires you to suppress your natural tendency to identify, label, and read the information as a whole. To overcome this tendency, try to consider the display as merely a pattern of shapes. One method designers use for focusing on the overall design is to half shut their eyes, which filters out spatial detail.

- Try to position pictures consistently within a Help topic.

Unless you have considerable design experience, it is better not to position pictures irregularly in a topic. A good solution is to place them in a consistent position (flush with the left margin, for example) in topics with similar content.

### **Explanatory Text**

Including explanatory text can help users understand the importance of the pictures and see how they relate to other information. For example:

- Include captions and titles when the graphic is separated from the topic (when it appears in a pop-up window, for example).
- Use callouts to label parts of an illustration (callouts can be plain text or hot spots that further explain the part).
- Add comments to explain difficult graphics.

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### **Picture Text**

The text that appears in your pictures should be chosen in relation to the text in your Help file and should take screen legibility into account. In general:

- Use the same size text in pictures as body text if you want the entire picture to be legible.
- Use a smaller type size if you reduce the scale of the picture.
- Use “greeked” text when you don’t want users to read it.
- Limit the number of different fonts in pictures.
- Avoid text at an angle.