Information Structure and Layout

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:

- For example, a caption associated with a specific picture.
- For example, a series of numbered steps.
- 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?
- In what order should the various elements be presented? Does the order agree with the information presented? Which are the most important items?
- Is there a hierarchy of importance?

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:
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.
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 but users tend to scan to the left and upward.

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. 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 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.

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:

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.

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. 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.

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. 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:

- 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.

  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.

- 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. 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 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.

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

- 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.

- 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 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:

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 lay out, 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.

Text

The one portion of multimedia that everyone feels familiar with is text. Text files form one of the largest segments of the multimedia developer's base of information. Many multimedia applications will be mainly text driven—developed by converting a book into an online multimedia application.
The target format for Windows with Multimedia is either straight ASCII or Rich Text Format (RTF—output by Word for Windows). Whenever you convert text files, however, you invariably lose some original formatting. You still must add the proper formatting, indexing, and other referencing tags to make the text useful. With the proliferation of word processors, desktop publishing programs, and electronic typesetting systems, almost everything currently being printed also exists in one electronically readable format or another. If the issues associated with text preparation seem overwhelming, you have another alternative: pay someone else to do it. There are a number of data preparation houses that will gladly take your money and your text and return a finished product.

Note:
The Rich Text Format (RTF) is documented in the Word for Windows Technical Reference, available from Microsoft Press.

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?

An example of what text is good for:

- 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.)

  Pictures are not often used for depicting abstract ideas, such as “the meaning

of happiness," where traditionally words are much better suited. 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:

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

- 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.

- 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.

  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

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.

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.

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.

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 a
lternative than indenting for differentiating lists from the rest of the topic. Use the

following guideline when creating lists:

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. 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 th
e items within the column are the same type (related by information category); horizontal alignment signifies that all items in the row have the same functional relationship to each other.

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 re
quires 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.

Use the following guidelines when creating online tables:

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

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. These techniques should help make elements within a column more evenly matched. However, this implies that the information within the table can be divided into logical groupings.

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.

End.