QuikScan: Formatting Documents for Better Comprehension and Navigation

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Abstract

Design: QuikScan is an innovative format that makes print and online documents more usable. QuikScan employs within-document summaries formatted as numbered list items. These numbers correspond to numbers placed in the body of the document where the summarized ideas are discussed in full. QuikScan enables readers to (1) read summaries instead of the detailed content, (2) use the summaries as previews, (3) navigate quickly to the place where a summarized idea is fully discussed in the body of the document, and (4) direct other individuals to locations in the document. QuikScan is nonproprietary; anyone is free to use it and adapt it to their needs.

Requirements: QuikScanning requires the skills of a talented editor and takes practice to master. QuikScanners must choose among four kinds of summaries and three numbering systems, depending on the document's heading structure and other factors. Document elements such as graphics require special techniques. The list items that make up QuikScan summaries must be skillfully written, and target numbers must be placed with care.

Results: Empirical studies have demonstrated that QuikScan improves comprehension and the ability to navigate quickly through a document. In addition, QuikScan is regarded positively by readers. A pilot study suggests the value of QuikScan for blind readers.

Drawbacks and limitations: QuikScan requires extra work, makes documents longer, and increases both visual complexity and the number of short pages. It is not suitable for documents that do not much benefit from summarization or for documents with free-form layouts.

Keywords: QuikScan, summaries, document format, layout, reading comprehension

Practitioner's Takeaway

- QuikScan is a better way to format many kinds of print and online documents.
- Research shows that QuikScan increases reading comprehension and the reader's ability to navigate within the document. Also, readers like using QuikScanned documents.
- To QuikScan, you add within-document summaries with numbers keyed to numbers placed in the body of the document.
- QuikScan is nonproprietary. Anyone can use it and adapt it to their needs.

QuikScan

Introduction

QuikScan is a newly developed, innovative document format that facilitates reading comprehension and the reader's ability to navigate within a document. It uses within-document summaries to enable readers to quickly identify and absorb the key points of a document. Readers readily figure out how QuikScan works and like using QuikScanned documents. We believe that QuikScan holds considerable promise for improving the usefulness of a wide range of documents, both print and online (Zhou, 2008). This article explains the benefits of QuikScan and how to use it. QuikScan is nonproprietary; anyone can use QuikScan freely and can extend or modify it to meet their own needs.

The use of summaries and abstracts is a very prevalent and successful strategy in information design (Lorch & Lorch, 1995; Nevid & Lampmann, 2003). Summaries and abstracts, however, almost always come at the beginning of a document or at the beginning of a chapter. QuikScan adds special types of summaries throughout the document.

There are four types of QuikScan summaries. The most prevalent type, the Standard Summary, is shown in Figure 1 along with a small portion of the document that is being QuikScanned. The summary takes the form of a box consisting of numbered list items followed by right braces. In Figure 1, for instance, there are three numbered list items. Each number corresponds to a "target number" placed in the body of the document that indicates where the summarized idea is discussed in full. Readers use the summaries to identify ideas of interest and then quickly scan the body text for the target number with its target text. Figure 1 and other figures in this article showing QuikScan summaries are somewhat unrealistic due to the need to limit the size of the figures. In many instances, the expanse of text following a summary is significantly longer than what is shown in the figures, and so the reader is skimming further into the body of the text to find target numbers. To ensure that the target numbers stand out from the surrounding text, they are bolded, highlighted, and preceded by a left brace and a blank space.

There are four productive uses of QuikScan summaries. A reader can

1. Read summaries instead of the detailed content.
2. Use the summaries as previews, thereby increasing comprehension.
3. Use the numbered list items to quickly navigate to the place in the text where the summarized idea is fully discussed.
4. Direct other individuals to a location in the body of the document, as in "Ninad, please check the provision regarding export policy. That's target number 64."

QuikScan requires the skills of a talented technical editor or someone else with both first-rate language skills and a good grasp of the audiences, purposes, genres, and uses of functional documents. You can QuikScan documents while they are being planned and written, during the editing process, or after they have been written. To become a QuikScanner, you must learn the moderately complex conventions of the QuikScan format and do some practicing. The complexity of QuikScan, however, goes largely unnoticed by the reader; QuikScan is highly intuitive and can be explained in a brief handout.

This article explains all but the subtleties of QuikScan. The QuikScan web site (www.QuikScan.org) explains special issues and provides sample QuikScanned documents, a QuikScanner's quick reference, tutorials, a handout for new readers of QuikScanned documents, and other resources.

Because the basic idea underlying QuikScan is simple and robust, it can be used in many circumstances, such as business meetings in which a medium-to-long document is the focus of discussion (Zhou & Farkas, 2006). If the document under discussion has been QuikScanned, a poorly prepared attendee can much more easily get the gist of each part of the document that is being discussed and therefore participate productively in the meeting. QuikScan also holds promise as an assistive technology for blind readers. In a pilot study, a blind reader used a QuikScanned document with text-to-speech software (Zhou, 2008). With conventional formatting, this individual often waits impatiently for the software to pronounce the information he wants.

Proxy Caches

7} Proxy caches are used by large organizations to serve many users.

8} Users can request a proxy cache through a setting on their browser, or requests from browsers can be redirected automatically through "interception."

9} Because proxy caches are shared caches, they re-use a single representation and reduce latency and network traffic.

{ 7 Proxy caches work on the same principle as browser caches, but serve hundreds or thousands of users; large corporations and ISPs often set them up on their firewalls or as standalone devices (also known as *intermediaries*).

{ 8 Because proxy caches aren't part of the client or the origin server, but instead are out on the network, requests have to be routed to them in some manner. One way to do this is to use your browser's proxy setting to manually tell it what proxy to use; another is using interception. Interception proxies have web requests redirected to them by the underlying network itself, so that clients don't need to be configured for them, or even know about them.

{ 9 Proxy caches are a type of shared cache; rather than just having one person using them, they usually have a large number of users, and because of this they are very good at reducing latency and network traffic. That's because popular representations are reused a number of times.

Figure 1. A QuikScan Standard Summary and the body text that is being summarized

He was very enthusiastic about QuikScan because he could listen for the previewed ideas in the summaries and then use the Find feature of his word processor to jump directly to this information. We think that more uses for QuikScan may be found.[1]

Research on QuikScan

In addition to the pilot study referred to above, QuikScan has been empirically tested by researchers at the University of Washington (USA) and the University of Twente (The Netherlands). At the University of Washington, two empirical studies on an earlier version of QuikScan tested QuikScan's effectiveness for reading comprehension and retention and for navigation. In the first study (Zhou & Farkas, 2007; Zhou, 2008), 40 university students read either a QuikScanned document or a non-QuikScanned version of the same document and answered comprehension questions.[2] This study showed that QuikScan improves reading comprehension by 13%. To determine

whether QuikScan improves retention, the subjects returned a week later and answered a resequenced version of the original questions. Although the readers of the QuikScanned version scored higher in the retention test, the results did not achieve significance, probably due to the smaller number of students (28) who participated.

In the second study (Zhou, 2008; Zhou & Farkas, 2009), 40 participants read either a QuikScanned or a non-QuikScanned version of the same document used in the first study and performed navigation tasks based on a questionnaire. Those who used the QuikScanned version found information much faster, although they did not achieve significantly lower error rates. When surveyed, they indicated a highly favorable attitude toward QuikScan.

In a recent and as yet unpublished study by Van der Meij & Van der Meij (2009) at the University of Twente, QuikScan readers scored 41% better in a comprehension test. Twenty university students read a complex book chapter which had been QuikScanned, and 20 read a version of the same chapter to which a structured abstract had been added.[3] Structured abstracts employ headings that map the document's own headings and are demonstrably superior to conventional abstracts (Hartley, 2004). Although the QuikScanned document was 9.7% longer than the version with the structured abstract, the difference in reading times was insignificant. Both groups of participants expressed positive attitudes toward the format they had used. In sum, these studies provide strong evidence that QuikScan improves comprehension and navigation and elicits favorable responses from readers.

QuikScan

Drawbacks and Limitations

QuikScan does have drawbacks and limitations. An obvious drawback is that QuikScanning a document requires extra work, in particular, formatting the summaries and writing the list items. Some of the extra writing effort, however, is recouped because the list items become a good starting point for writing an executive summary or abstract that would likely be written anyway. Summaries can be formatted efficiently using the shortcut techniques available in full-featured word processing applications. Working in MS Word 2007 and using the QuickParts feature, we insert a single-cell table containing a numbered list. In most situations, we can make list item numbers increment automatically as each summary is inserted. Even so, because of the extra effort, QuikScan will most often be used for relatively high-value documents, such as documents that will be broadly distributed or will be the basis of important decisions. Two further drawbacks are that QuikScanning adds length and visual complexity to a document and (as explained below) increases the frequency of short pages. A final drawback is that when someone reads summaries rather than a complete document, the person gradually loses context that will be helpful when reading deeper into the document. But this is the price we always pay when we choose to save time by reading selectively.

One limitation of QuikScan is that it is not well suited for manuals, lists of product components, and other genres in which the key information consists of specifics (such as numbered steps) that do not benefit much from summarization. QuikScan is best suited for reports, white papers, technical briefings, textbooks, and other expository genres.

A second limitation pertains to documents with elaborate layouts. QuikScan is difficult or even impossible to implement with multiple columns of varying widths, free-form grids, and other complexities characteristic of newsletters and many web site home pages. However, if such documents are intended only for on-screen reading, the QuikScan summaries can be implemented as Adobe Acrobat sticky notes (small pop-up windows) and so will not interfere with the layout. Documents with straightforward, two-column layouts present no problems for QuikScan. With certain kinds of formatting, such as strict two-page spreads, QuikScanning should be done while the document is being planned and written.

Finally, while this is not exactly a limitation, some documents are formatted in a highly visual manner and may already include various kinds of previews and summaries. In other words, if the document already has ample QuikScan-like components, there is less reason to QuikScan it. Notwithstanding these drawbacks and limitations, there are, we believe, many instances in which readers will greatly benefit from and appreciate the use of the QuikScan format. We now explain the following:

1. The four types of QuikScan summaries
2. QuikScan's three numbering systems
3. Special techniques
4. How to write list items and place target numbers in the text

The QuikScan Summaries

QuikScan summaries should appear at regular intervals throughout the document and more frequently in the more important portions of the document. Summaries are boxed, and we favor using a light background color (such as 15% grayscale). For several reasons, long summaries should be avoided: (1) Long summaries are burdensome to read. (2) Because a summary should not be split between pages, long summaries will increase the frequency with which the QuikScanner needs to force a page break and thereby create a short page preceding the summary. (3) Long summaries can result in excessive distance between list items and their target numbers. For example, if a summary contains 20 list items, the final target number will be a long distance from the summary.

QuikScan employs four types of summaries: Standard Summaries, Compound Summaries, Floating Summaries, and Descriptive Summaries. Collectively, these four types of summaries will accommodate a great many of the variations we see in the formatting of expository documents.

Standard Summaries

The Standard Summary, shown above in Figure 1, is the most prevalent type of QuikScan summary. It appears directly after a heading and usually summarizes the entire section of the document (up to the next heading). Many documents employ straightforward heading structures and can be QuikScanned simply by adding Standard Summaries and perhaps a few Floating Summaries (explained below). Here we explain the use of Standard Summaries in two special cases.

Ignoring one of two introductory headings. One special case arises when a document employs a heading (say, a first-level heading) followed by a brief preview sentence stating that Topics A, B, and C will now be discussed. Following is a second-level heading that introduces the section on Topic A. The QuikScanner may choose to ignore the first-level heading and place a Standard Summary (which summarizes Topic A) directly after the Topic A heading. (Very possibly, the QuikScanner will do the same after the Topic B and Topic C headings.) Similarly, if a document employs two headings without any text following the first of the headings ("stacked headings"), the QuikScanner decides which of these two headings should be followed by the Standard Summary.

Ignoring a minor heading. Sometimes, a heading (say, a second-level heading) is followed by an ample expanse of text and then by a third-level heading that is followed by a short expanse of text (most likely a paragraph or two). If the QuikScanner decides that this short section is of lesser importance or can be regarded as an extension of the previous section, the

Figure 2. A Compound Summary

QuikScanner can ignore the third-level heading and write one Standard Summary that summarizes both sections. QuikScanners should not carelessly depart from the conventions of QuikScan, but it is sensible to make whatever adjustments are most appropriate for the document at hand.

Compound Summaries

Some documents contain multiple short sections divided by headings and subheadings. In such cases, the QuikScanner might choose to employ multiple Standard Summaries, but often a single Compound Summary is a better choice. As shown in Figure 2, a Compound Summary appears directly before the first of a related group of short sections. The heading of each

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of the short sections is copied into the Compound Summary, and under each of these copied headings, the QuikScanner writes a brief summary of the section. List item numbers are placed before each of the copied headings. In the body of the document, the corresponding target numbers are placed before the headings. Note that in Figure 2, the QuikScanner decided not to write summary text after the first copied heading ("Implementation Considerations"). When, as often happens, the first of the sections summarized by a Compound Summary is of a higher heading level than the rest, the font size of its corresponding copied heading (as shown in Figure 2) should be larger than the font size of the other copied headings in the summary.

Floating Summaries

At times we add a summary at a logical division or transition point within a long expanse of text that does not contain a heading. The summary, in other words, is not anchored to a heading but "floats" in the body text, as shown in Figure 3. Floating Summaries prevent the preceding summary (most often a Standard Summary) from becoming too long; keep the list items close to the ideas they summarize; and mark the shift in topics, helping readers grasp the overall structure of the document. If the document contains very few headings, multiple Floating Summaries may be added. If the QuikScanner is both QuikScanning and editing the document, the QuikScanner can supply the needed heading and then add a Standard rather than a Floating Summary.

Descriptive Summaries

A Descriptive Summary, shown in Figure 4, is a means to provide a high-level overview rather than an item-by-item summary of a part of a document. The phrase "descriptive"

The concept of commodity risk, along with the development of appropriate market-based instruments to cope with such risks, has been broadened correspondingly to include weather-related risks as well as risks of volatile price swings in import prices for food and crude oil.

61} Experts meeting under UNCTAD auspices outlined a comprehensive agenda to address the vulnerabilities of commodity-dependent exporters.

62} The group's highest priority is to give developing countries improved access to primary commodity markets in developed countries.

63} Countries whose export earnings come largely from hydrocarbons and mining will benefit from policies that promote the effective and transparent management of fiscal revenues.

{ 61 While acknowledging the usefulness of market-based risk management strategies in setting price floors for commodity producers, a group of eminent persons on commodity issues meeting under UNCTAD auspices in 2003 outlined a broader and more comprehensive agenda to address the problems and vulnerabilities of commodity-dependent exporters stemming from severe price erosion and adverse terms-of-trade developments (United Nations Conference on Trade and Development, 2003f). The recommendations of the group contained specific proposals for short- and medium-term actions in the international community that would improve the development prospects of commodity-dependent countries.

{ 62 The highest priority among the group's recommendations was given to measures that give developing countries improved access to primary commodity markets in developed-country markets, including the elimination of market-distorting subsidies for cotton and other commodities; reduction of excess supply in some commodity

Figure 3. A Floating Summary consisting of three list items

comes from the familiar distinction between descriptive and informative abstracts (Alley, 1996). Whereas an informative abstract is written so that it can stand alone and does not refer to the document being summarized, a descriptive abstract describes (or "promises") what will be found in the document and usually refers explicitly to the document being summarized (e.g., "The article demonstrates that").

A Descriptive Summary consists of just one list item. Although the list item is numbered, there is no corresponding target number in the text. Whereas the decision to employ one of the other three summary types is in large part governed by the document's heading structure, a Descriptive Summary can be placed very flexibly before, after, or between headings.

23} The following are 15 frequently asked questions regarding the care of pet salamanders.

Figure 4. A Descriptive Summary of an FAQ with its sole list item

Descriptive Summaries are often used when the author has done a good job presenting information in a succinct manner, perhaps as a bulleted list. The QuikScanner decides that if the reader is interested in this information, it's best to read what the author has written rather than the QuikScanner's detailed summary. Descriptive Summaries also serve to invite users to bypass a part of the document that, in the view of the QuikScanner, will be of little interest to many readers.

To ensure that readers do not try to scan for the non-existent target number, a Descriptive Summary must be readily distinguishable from the other types of summaries. For this reason, a Descriptive Summary explicitly identifies the part of the document being summarized. For example, Figure 4 refers explicitly to the set of frequently asked questions. In the following example, the Descriptive Summary refers explicitly to Appendix C:

> 57} Appendix C consists of 10 tables showing the water-level fluctuation at Albright between 2000 and 2009.

Descriptive Summaries add flexibility to QuikScan, but they should not be used too often because they do not provide the benefits of the other QuikScan summaries. Certainly, they should not be used as a lazy alternative to the other summaries.

QuikScan Numbering

QuikScan employs three different systems for numbering list items: single-sequence numbering, two-part numbering, and the adoption of the document's native numbering system.

Single-Sequence Numbering

For relatively short documents, we favor a single sequence of numbers running consecutively (start to finish) throughout the entire document. Single-sequence numbering has been used in Figures 1–4.

Two-Part Numbering

For lengthy documents, we favor the two-part numbering system, shown in Figure 5. The number preceding the hyphen represents the count of QuikScan summaries up to that point in the document. In Figure 5, the value of the first number is 15 because this is the fifteenth summary in the document. The number following the hyphen restarts with each summary.

The two-part numbering system prevents a single sequence of numbers from becoming too large. We suggest choosing the two-part numbering system if you think that single-sequence numbering might reach three digits. Another benefit is that two-part numbering is easier to update if the document is significantly revised. Finally, notice that this QuikScanner has chosen to subdivide List Item 15-1 by placing letters before the three kinds of financial instruments and adding corresponding target letters to the body of the document.

Managing risk with market-based financial instruments

15-1} Developing countries had been encouraged to manage price risk with market-based financial instruments. These are: (A) basic forwards, (B) futures and options contracts, and (C) commodity-backed derivatives.

15-2} Forward contracts provide some (usually short-term) hedge against price risk but are not ideal hedging instruments.

15-3} Futures and options contracts are better hedging instruments because they are traded on organized international commodity exchanges.

{ 15-1 Even before the collapse of the major price stabilization and compensatory schemes, developing countries had been encouraged to use market-based financial instruments and techniques to manage commodity price risk. This strategy involved the use of {A basic forwards, {B futures and options contracts, and {C a wide range of commodity-backed derivative financial instruments. These tools were either tailor-made for specific transactions or traded publicly on international commodity exchanges.

{ 15-2 Forward contracts, which are used extensively by commodity producers in developing countries (usually through brokers and other intermediaries), provide some (usually short-term) hedge against price risk. However, because of these risks of default, and several other reasons discussed in more detail in the specialized literature, forward contracts and similar instruments are generally not considered ideal hedging instruments through which to offset commodity price risk (United Nations Conference on Trade and Development, 1994).

{ 15-3 Futures and options contracts, on the other hand, are considered better hedging instruments mainly because they are traded on organized international commodity exchanges such as the Chicago Board of Trade, the London Metals Exchange, the New York Mercantile Exchange, the Tokyo Commodity Exchange and commodity exchanges

Figure 5. A Standard Summary with the two-part numbering system

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Adapting to the Document's Native Numbering System

Many documents employ a system of decimal-numbered headings and subheadings. In such cases, the QuikScanner adapts to the document's native numbering system. Because the document uses decimal numbers in its heading system, we use uppercase letters rather than numbers for list items, as shown in Figure 6. Notice how the QuikScanner is still able to subdivide the first of the list items by using numbers instead of letters.

When a Floating Summary (or several Floating Summaries) is used in a document with decimal-numbered headings, the QuikScanner uses uppercase letters for list items and continues the letter sequence from the preceding summary. In the case of a Descriptive Summary, as shown in Figure 7, the decimal numbers of the headings being summarized can be used as the list item number.

Special Techniques

The four types of summaries and the three numbering systems accommodate much of the variation we see in expository documents. However, other techniques are sometimes called for.

Figures and Tables

When authors include figures and tables in a document, they generally discuss the figure or table in the text (and provide a figure or table reference). When QuikScanning a section of text that includes a figure or table, we write a list item that summarizes the author's discussion, and we provide a figure or table reference:

> 14-4} A cataract is a clouding that develops in the crystalline lens of the eye or its envelope. (See fig. 29.)

Figure 6. Adapting to a document's native numbering system

Figure 7. A Descriptive Summary of sections 4.0 through 4.4 of a document with decimal headings

The target number appears where the figure is discussed in the body of the text rather than in the figure's caption (unless the caption is the main discussion). If a figure or table is unimportant, the QuikScanner may completely ignore it.

Coexisting with a Document's Numbered Paragraphs

At times the QuikScanner will want to place target numbers before paragraphs in the body of the document that are already preceded by a number, letter, or bullet. In such cases, the QuikScanner's target number (and in some cases target letter) will need to coexist with the native numbers, letters, or bullets. Figure 8 shows how two QuikScan target numbers (14 and 15) coexist with the author's two numbered paragraphs.
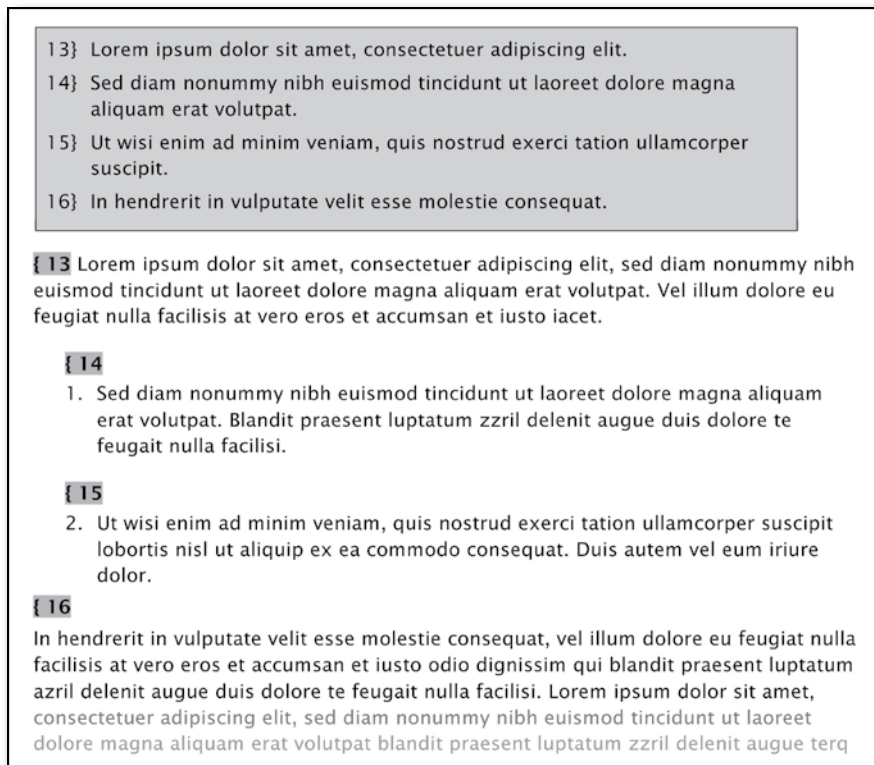
Figure 8. Two target numbers coexisting with the author's two numbered paragraphs

QuikScan Elaborations

Although QuikScan is fundamentally about summarizing the important ideas in a document, there are various situations in which the QuikScanner may want to provide extra information for the benefit of the audience. Elaborations may be added in whatever way best fits the document and the communication situation. There are no requirements except that it must be clear that the QuikScanner is adding the information.

For example, a QuikScanner might add a note to a list item so that it provides some extra background information. Or, if a QuikScanner encounters a bulleted list or table that is not well explained, the QuikScanner can add a Descriptive Summary that provides extra background or detail.

The need for elaboration may also arise when the QuikScanner is working for the audience's organization rather than for the organization that originated the document. For example, as shown in Figure 9, an in-house editor working for an architectural firm is QuikScanning a newly received RFP (request for proposal) for the benefit of the firm's busy staff. The editor notices a parenthetical phrase suggesting that another firm may have the inside track on this project. The QuikScanner, therefore, adds a special list item, an elaborative note, to "red flag" this information for the consideration of the firm's managers.

QuikScanning a Short Document

Even readers of short documents, such as a two-page fact sheet, can benefit from QuikScan. If the document does not employ headings, the most likely choice is a Standard Summary located directly after the title. This Standard Summary may be augmented with one or more Floating Summaries. If the document contains headings, a likely choice is a Compound Summary placed directly after the title. This is shown in Figure 10. Each of the headings in the fact sheet ("Cause," "Symptoms," and "Treatment") has been copied into the Compound Summary, and each of the copied headings is followed by a list item (for example, "A parasite found in salmon . . . ") summarizing the corresponding section of the document. A single QuikScan summary is, in fact, a close relative to the structured abstracts advocated by Hartley (2004).

Writing List Items and Placing Target Numbers

The heart of QuikScan is writing the list items that collectively make up the QuikScan summaries. Below are seven guidelines. There are fewer decisions to be made regarding the placement of target numbers, but the two guidelines offered below will prove useful.

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Figure 9. An elaborative note added by a QuikScanner working for the audience's organization

Figure 10. QuikScanning a short document with multiple headings

Writing List Items

1. Consider the frequency with which you are adding list items. A densely written scientific journal article will require more list items than a loosely written corporate policy statement. New QuikScanners, we think, tend to write too many list items. A very rough guideline is three to five list items per page. If a document contains a great many list items, the QuikScanner may not be rigorously selecting the key ideas in the document.

2. Each list item should be a complete, grammatical sentence, ideally no more than 25 words long. Occasionally, two sentences can be used. Terse, tightly written list items are generally desirable, but avoid syntax that may cause problems for your audience.

3. Each summary should, as much as possible, function as a standalone module. This facilitates selective reading of the document.

4. The main job of a summary is to summarize a portion of the document. However, a skillful QuikScanner can often add well-chosen words or phrases to the list items to broaden the meaning of a summary so that it can be better understood by readers who are skipping around in the document.

5. Consider using the topic sentence of a paragraph as the basis of a list item. However, your list item may need to incorporate an idea from a subsequent sentence in the paragraph. In Figure 11, our underlining shows how a QuikScanner created a list item based on both the topic sentence and the last sentence of the paragraph.

6. Concomitantly, some paragraphs start slowly and do not provide key information in the first sentence or two. Don't summarize such incidental content.

Figure 11. A list item that is derived from both the topic sentence and the last sentence of a paragraph

7. Carefully consider which ideas in the document will be summarized in greater or lesser detail. For example, in a description of a species of lizard that is geared to an audience of naturalists, it may be important for a list item to specify the kinds of insects that make up the lizard's typical diet. In a guide for lizard owners, who will be feeding their lizards commercial lizard food or table scraps, less detail regarding the lizard's diet in the wild may well suffice.

Placing Target Numbers

1. Try to place target numbers as close as possible to where the idea summarized by the list item (the target text) truly begins. You may wish to move the target number backward a sentence or two to give the reader a broader context, but keep in mind that readers can always backtrack if they feel the need for more context.

2. At times you may be reluctant to place a target number at the beginning of the target text because the writer has employed a pronoun whose referent will be unclear to the reader who is navigating from the summary to the target text. Consider adding a word or phrase (between square brackets) to clarify the meaning of the sentence. Highlight the word or phrase to make it absolutely clear that it was added by the QuikScanner:

   { 11 Because they [proxy caches] aren't part of the client or the origin server, but instead are out on the network, requests have to be routed to them in some manner.

Conclusion

Even in the age of multimedia, the Internet, and social media, extended text—both online and in print—will continue to be important, in particular for communicating large bodies of complex information. Extended text, typically augmented by visuals, permits the careful examination of sentences and paragraphs, the ability to readily compare multiple documents (Rouet, 2006), and the convenient annotation and reuse of content.

Over the last 35 years, digital technology has greatly enhanced our ability to create, modify, navigate through, and disseminate text. There has not, however, been much change in the ways in which we format extended text. Our standard formats, based in large part on simply marking hierarchical structure with headings, are not ideal, but are tacitly accepted as "good enough" (Farkas, 2005). QuikScan is superior to standard formatting in important respects and is both adaptable and relatively easy to implement. We have sought the opportunity to explain QuikScan in this publication because it is read by a large number of professionals who have the skill to QuikScan documents effectively and opportunities to pioneer innovations in information design.

Notes

[1]You may wonder why we didn't QuikScan this article. The answer is that it's confusing to add QuikScan summaries and target numbers to a document in which QuikScan summaries and target numbers are being shown as examples. One kind of document that should not be QuikScanned is an explanation of QuikScan.

[2]The document was a 10-page excerpt from Chapter II of the United Nations report, *World economic and social survey 2005: Financing for development*. The document was modified for the experiment in the following ways: Tables and charts (which were not essential to the meaning) were removed because research participants would have spent significant time examining them.

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Doing so required minor editing for continuity. Explanatory footnotes, the reference list, and a supplementary narrow column containing pull quotes were also removed.

[3] The chapter was D. B. Pillemer's "'Hearing the news' versus 'being there'" in O. Luminet and A. Curci (eds.) *Flashbulb memories: New issues and new perspectives*. East Sussex, England: Psychology Press, 2009. The case descriptions at the start of the chapter and the summary at the end were removed. The heading structure and all other formatting were not changed.

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