See It, Hear It: Multimedia Search Goes Beyond Text

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Abstract:
There's more to search than text. Information comes in many shapes, forms, colours, sounds, and moving images. Even printed newspapers, journals and newsletters include photographs, charts, graphs and illustrations. Those accustomed to obtaining information from television, radio and video—and that's most people—want to search the spoken word, hear commentary and watch film clips. They expect information professionals will include multimedia sources in their Web research. Even YouTube is moving beyond adolescent, amateur videos. What are some good resources for professionals to use for multimedia search and how do they work?

Why go beyond text

There is probably nothing quite as boring as text uninterrupted by photographs, charts, graphs, drawings and other images. Unfortunately, the traditional online bibliographic databases found in most libraries excluded this type of material until recently and in some databases you will still find merely a note that indicates the original article contains graphs, charts, photos, or other non-textual materials. You have to go to the original, either in print or electronic form, to see this information.

Web search engines, such as Google and Yahoo, began by presenting searchers with a textual list of results in response to a query. You entered your search terms in the search box and were "rewarded" with a long list of potential websites that contained your answer, ranked by relevance. Only recently have these search engines added a visual component to these results with an image of the webpage accompanying the snippet.

Developments in multimedia search have been on two fronts. First is the ability to search specifically for an image, a video, or an audio clip. Major general web search engines such as Google, Microsoft Live and Yahoo, have image databases separate from their main databases (images.google.com,

images.live.com and images.yahoo.com). Specialized search engines that only search for multimedia content are popping up as well. The second front is search engines that display results in a visual fashion. Instead of a list, you see results as relational, as pictures, or with embedded audiovisual content.

Searching for images

Searchability of images differs significantly from searching text. You can't simply match words and phrases from a search query with those in a source document. Instead you rely on metadata that may not coincide with your conception of the image. You need to think about colour and shape. If you're accustomed to searching with controlled vocabulary, you need to take into account the vagaries of folksonomies (which are really uncontrolled vocabularies). Images can be misrepresented both on purpose and by accident. Suppose it's a photo of two people but only one is named. Suppose there are multiple individuals with the same name. Suppose you want a drawing of a 1920s Flapper but find that "flapper" has a very different meaning for the plumbing profession. If you plan to re-use the image, can you legally do that or is the image copyrighted?

What types of images can you find through databases? They could be photographs, graphic designs, clip art, representations of museum objects, advertisements, line drawings, cartoons, blueprints, trademarks or maps. If you don't really care about image type, start with a general web search image database. If you know you want a photograph, start with a photo database such as Flickr or Picasa. For image metasearch engines, try Pixolu (www.pixolu.de), which is an academic research project that uses semantic search techniques to search Flickr and Yahoo images, or Ditto (www.ditto.com), relies on indexing, relevance and verification to provide visual navigation of the web.

Not all image databases rely on folksonomies. Both Corbis (www.corbis.com) and Getty (www.gettyimages.com) have extensive collections of professionally taken, stock photographs. Advanced search capabilities, designed for image searching, coupled with a strong commitment to controlled vocabulary, make these a different search experience from other image databases.

Searching for audio and video content

Multimedia isn't just about looking at images, it's also about hearing information and seeing information. By hearing and seeing information, I'm not referring to music for entertainment, but spoken words that can be used for research purposes. Think about reading a transcript of an interview or news programme versus listening to it. You miss the nuances of the voice, the intonations, the subtleties. Audio includes podcasts, streaming and archives. Increasingly, there are search engines that actually search the spoken word rather than the metadata assigned to the audio source.

Quintura (www.quintura.com) searches selected websites and video, offering a dual screen view with a concept map on one half and a list on the other. It relaunched its search home page mid-April 2009 and now has U.S. patents for its search engine graphical interface and context-based search visualization using neural networks. Quintura isn't the only multimedia search engine. SearchMe (www.searchme.com) offers what it calls "true" blended search results, combining web, video, images, music, news, and Twitter results organized by their relevance, playable inside the search results page, and shareable via Facebook and Twitter. SearchMe displays results as small versions of entire web pages, in a format that looks just like the "cover flow" display in iTunes, but which SearchMe calls "stacks." Viewzi (www.viewzi.com) takes a different approach to multimedia search, claiming to "turn blah into bling."

For science researchers, both BiomedCentral and Public Library of Science now have video databases. BiomedCentral (www.biomedcentral.com/profiles.tv) presents interviews with scientists, plus it has its on YouTube channel (http://www.youtube.com/user/BioMedCentral). PLoS's SciVee (www.scivee.tv) shows videos of researchers presenting their research findings.

Streaming video is increasingly being used for courseware, allowing viewers to see a professor lecture even if they're not enrolled in the class, and to follow conferences such is INFORUM.

Displaying results visually

Multimedia search isn't restricted to searching for images, audio and video. Search engines also exist that display results graphically rather than as lists of text. Kartoo (www.kartoo.com) and Grokker (www.groxis.com) are two of the best known. EBSCO previously used Grokker for its visual search engine but has now moved to an application developed in-house. A new federated search engine for science, Deep Dyve, says that its graphical representation of search results enables researchers to see relationships previously hidden in text.

- Timelines are another interesting tool for graphically presenting results. Dipity (www.dipity.com) allows you to add in important dates and display as a time line. Google Labs launched Google News Timeline, which organizes information chronologically. Google News Timeline (http://newstimeline.googlelabs.com) allows users to view news, scanned newspapers and magazines, blog posts, sports scores, and more on a zoomable, graphical timeline.

Premium content

Some of our traditional premium content providers are expanding beyond text. Ovid, for example, recently announced a publishing partnership with Primal Pictures to offer more than 30 three dimensional anatomy modules on OvidSP.

There are separate modules for human anatomy, dentistry, and regional for specific regions of the body.

Since its inception, Knovel has used interactive tools to allow applied scientists, engineers, and students to manipulate scientific data to gain additional insights for their research projects. ProQuest's Dissertation Abstracts includes the images included in the text, at least for more recent theses. Other ProQuest databases offer the option of viewing the full image version of journal and newspaper articles. CSA Illustrata provides the search capability for "deep indexing," searching for data in charts and graphs of scientific articles.

Future

The future will not only be televised, so was the past. A very interesting project of the European Union is VideoActive (www.viedoactive.eu), which opens up television archives for searching. For history, political science, and popular culture research, the clips are priceless.

It's clear that people want information in multimedia formats; they need to go beyond text. The challenge for information professionals is findability. We need better search engines to find multimedia information and we need better multimedia databases and digital collections at a professional research level. Issues surrounding comprehensiveness and accuracy need to be resolved. If our premium content vendors are to remain viable, they also need to embrace multimedia in their products. For serious research, the signal to noise ratio that now exists with multimedia search must alter so that information professionals can easily find useful information in non-textual formats.