ONLINE DATABASES

When You Just Need a Part

By Carol Tenopir

SOMETIMES A USER REALLY ONLY needs part of an article or part of a chapter—a table, a photograph, a map, or another item. Electronic journals and books make all of these levels of granularity possible.

Granularity

E-resources are "divisible" in ways that print is not, although we may question how "independent" the parts might be.

The two familiar levels of granularity for searching, browsing, and reading are whole journal issues or books and separate articles or chapters. The fundamental unit for library collection development and payment remains the journal or book, while the fundamental unit of indexing and abstracting search is typically a journal article or book chapter.

E-resources provide another possible level of granularity. On average, a natural science article contains ten images, a technology journal article contains 14, and a social sciences article has four. Books and book chapters typically contain many more. Some full-text article systems such as Gale's InfoTrac have a searchable field for captions, but standard indexing rules assign terms that describe the entire article, book, or chapter, not the objects or figures inside. Identifying, extracting, and indexing each table, graph, photograph, map, or other figure within an article or book may help scientists find information they need more quickly or direct them to just the relevant level of granularity needed at the time.

Knovel for books as objects

The **Knovel Library** (www.knovel.com) is a good example of how tables can stand on their own within the context of the whole book. Knovel's primary audience of engineers or researchers in technical fields may need just a piece of a book, often just a table or graph. Knovel Library books are searchable and displayed with tables and text sections identified in the order they appear in the book as a whole. Users can select a table but read the text that surrounds it.

Knovel's tables are powerful on their own, because the system makes use of interactive tools including equation or graph plotting, sorting, exporting to a spreadsheet, and more. Knovel ebooks offer multiple levels of granularity for multiple uses.

Searching images in CSA

Last year CSA hired my research center, Center for Information Studies at the University of Tennessee, to field-test a prototype of its Tables and Figures indexing system. CSA wanted to see if scientists would find the indexing system useful and how they might use it. The result is **CSA Illustrata: Natural Sciences**, available since January (www.csa.com/csaillustrata). (We wrote a white paper describing our findings, also available from CSA.)

Each record in CSA Illustrata: Natural Sciences is centered on an image extracted from scholarly articles. The images are indexed using a computer-based indexing system that assigns subject, taxonomic, and geographic terms as well as a description of the type of image.

The caption is displayed along with the thumbnail image and the full bibliographic information for the complete article. This enables a searcher to find a relevant table, photograph, map, graph, or other image but with the information needed to cite the entire article. Most images can be enlarged from the initial thumbnail display.

A link to the complete article record keeps the images in the context of the whole and displays all associated images in addition to the abstract, full bibliographic information, and indexing terms.

Testing scientists

Scientists told us that currently they search for photographs and maps more than they do for tables or graphs because they are easier to find. They use Google Image Search generally but are not often satisfied with the results because scholarly images are typically not available.

Many of the test searches done by the scientists in our study located relevant articles they had not found using conventional search methods. This works best when a researcher is studying a relatively narrow area and has difficulty finding everything on the topic.

> Identifying and indexing each table, graph, and figure helps scientists find what they need

When users really need only a photograph or a map, they found it to be more efficient to search for that object only. Scientists need visual objects for a variety of reasons—to illustrate class lectures, to check laboratory instrument accuracy, to see photographs by other field scientists, or to verify the geographic location of a study.

Many scientists cautioned that objects must be provided within the context of the whole. Extracting and providing just tables and figures without an abstract of the entire article and without a link to the full text could be dangerous. They want to find tables and figures, with bibliographic attribution to the full article.

Knovel Library and CSA Illustrata: Natural Sciences are approaches that add another level of granularity for researchers, while retaining the context of the whole.

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