

Information scientists have generally accepted that there's a difference in the way 'basic' and 'applied' scientists deal with the problems of current awareness and retrospective search. 'Basic' scientists prefer to browse. Indeed, a recent article asserts that the 'basic' scientist *must* browse, however good any machine system available to him.<sup>1</sup> 'Applied' scientists on the other hand, and especially engineers, prefer or require speedy access to specific areas or types of information as dictated by the 'mission-orientation' of their current assignment.<sup>2</sup>

This hypothesis implies that 'basic' scientists would prefer to scan *Current Contents*<sup>®</sup> page-by-page. 'Applied' engineers would go straight to particular journal titles, or to specific terms in an index to article titles listed in CC<sup>®</sup>. If all this is true, one might ask why ISI<sup>®</sup> added a *Weekly Subject Index (WSI)* to *Current Contents/Life Sciences*, two years ago rather than to *CC/Engineering & Technology* or to *CC/Agriculture, Biology & Environmental Sciences*.

The 'basic' scientist may indeed prefer to browse, but he doesn't, therefore, ignore the help its *WSI* can give him. Taking the basic & browse vs. applied & specific too much at face value, we frankly underestimated the appeal of *WSI* to our 'basic' *CC/Life Sciences* audience. Many of them do use the index; even more assign use of it (while

they browse) to lab assistants, secretaries, librarians, or others, as a supplement to and as a check on their browsing. Others use it as an interim retrospective search tool until quarterly or annual indexes are available.

We 'illogically' launched a *WSI* for *CC/Life Sciences*, rather than for *CC/Engineering & Technology* because realities of the ISI data base dictated the choice. Our underestimation of the fantastic response is a tribute to the impact of accepted dogma.

The reality referred to above means that the *WSI* of *CC/Life Sciences* gets a "free ride" from data input for the *Science Citation Index*<sup>®</sup>. For the *SCI*<sup>®</sup> data base, we pick up article titles, authors, addresses, etc. Where the total journal coverage of any edition of *CC* is included in the coverage of *SCI*, we have all that's needed for a *WSI*. When we first contemplated a *WSI* for *CC/Life Sciences*, most of its 1053 journals were already covered by *SCI*. To get the *WSI* started, we added the few that weren't. This addition slightly enlarged coverage of *SCI* and that of *ASCA*<sup>®</sup> as well.

That first *WSI* was the thin end of a wedge. We soon added a *WSI* to *CC/Physical & Chemical Sciences*. When we launched *CC/Clinical Practice*, the need for a weekly index to the material seemed to me unarguable. But the lists

of journals covered by *CC/P&CS* and *CC/Clinical* included many not covered by *SCI*. So we added to the ISI data bank only the information necessary for the *WSI*: article titles, authors, addresses, etc.—but not the references cited. The addition of these data has also enlarged the scope of our *ASCA* system for selective dissemination and for ISI tape customers.

In 1975 we intend to provide *Weekly Subject Indexes* for all editions of *CC*. The *Social Sciences Citation Index*™ has made it possible to add *WSI* to *CC/Social & Behavioral Sciences*. But the journals covered by *CC/Agriculture, Biology & Environmental Sciences* are covered only in part by *SCI* and other *CC*'s. Production of *WSIs* for *CC/AB&ES* and *CC/E&T* would increase not only the usefulness of these individual products, but also the scope and value of *ASCA* and *ISI* tapes.

These logistical problems are somewhat dull for most readers, but we are often asked to reconcile the seeming discrepancies in the journal coverages of our services. Thus if you read all six editions of *CC*, you cover 4160 different journals. There is an overlap but the duplication is not as extensive as some suppose. The average journal is now covered in only 1.2 editions of *CC*. Table 1 shows the numbers covered by one edition, by two editions, three editions, etc. Table 2 shows the overlap of journals between various editions of *CC* and other ISI services.

The advent of ISI's on-line *SCI-SEARCH*®, increased use of *ASCA*, and increased use of ISI tapes will have a significant effect on the economics involved. These services can absorb some of the cost of processing data from journals not yet covered by *SCI* and *SSCI*™.

The justification for complete *CC* indexing of E&T and applied science will be made possible through a *Technology Citation Index*. From it a *WSI* for *CC/E&T* would be a simple spin-off. Indeed, I could have begun this essay by saying that production of a *Technology Citation Index* (one that includes coverage of patents) would guarantee a *WSI* for *CC/Engineering & Technology*. And since much of technology is applied science, many of the journals covered by a *TCI* would push us toward the same 'free ride' capability for a *WSI* to *CC/AB&ES* as well.

A *Technology Citation Index* must, of course, recommend itself to us for other reasons than the role it might play in neatly completing a circle of integrated data processing here at ISI. There are such reasons. First, there's the business of patents; second, there's the technologist's interest in published material that a 'basic' scientist would usually consider trivial redundancy.

In 1964 and 1965, we did include United States patents in the coverage of *SCI*. But little interest was shown by users at the time. During the past decade, however, use of the *SCI* has become a routine method of search. Its importance in review of the technological literature is now much better understood. One would have thought patent searches to be an area where the value of a citation index would be immediately recognized even though patents are indexed by several existing secondary services. It was naivete that led me to believe, almost twenty years ago<sup>3</sup> that patent folk would leap at the chance to improve an archaic system. But the arcane methods of patentology coincide with a deep conservatism.

As mentioned above, redundancy is of interest in technology. We have long

Table 1. Journal Coverage of the Six Editions of *Current Contents*\*

Total Coverage of all Editions	In One Edition	Multiple Coverage		
		In Two	In Three	In Four
4160	3344	780	29 <sup>a</sup>	7 <sup>b</sup>

- a. This small triple coverage is made up for the most part of journals which appear in *CC/Life Sciences*, *CC/Clinical Practice*, and *CC/Social and Behavioral Sciences*.
- b. These seven journals are: *American Scientist*, *Biometrics*, *Cybernetics*, *Endeavor*, *International Journal of Applied Radiation and Isotopes*, *Scientific American*, and *Search*.

Table 2. Overlap in Coverage between *ASCA*, *SCI*, *SSCI*, and *Current Contents*\*

ISI services	ASCA <sup>a</sup>	SCI	SSCI	CURRENT CONTENTS					
				LIFE	PHYS	AGR	SOC	ENG	CLIN
CLIN	673	385	51	331	0	2	61	0	673
ENG	501	478	23	10	159	19	17	657	
SOC	1053	175	878	57	11	7	1106		
AGR	365	358	7	140	33	827			
PHYS	703	613	15	109	703				
LIFE	1053	1039	55	1053					
SSCI	1031	187	1031						
SCI	2343	2343 <sup>c</sup>							
ASCA	3782 <sup>b</sup>								

The counts in each box are the number of journals common to the intersection of the services indicated in that row and column. The total number of journals involved is 4455. The total number of journals considering *Current Contents* only is 4160 (see table 1). The total of their individual coverages (considering duplication) is 5019.

- a. The row and column heading abbreviations indicate:
- ASCA — Automatic Subject Citation Alert
  - SCI — Science Citation Index
  - SSCI — Social Sciences Citation Index
  - Life — *Current Contents/Life Sciences*
  - Phys — *Current Contents/Physical & Chemical Sciences*
  - Agr — *Current Contents/Agriculture, Biology and Environmental Sciences*
  - Soc — *Current Contents/Social and Behavioral Sciences*
  - Eng — *Current Contents/Engineering and Technology*
  - Clin — *Current Contents/Clinical Practice*
- b. These numbers in bold face indicate total coverage of the particular service.
- c. Counts for the *SSCI* do not include journals, not wholly covered, that are regularly scanned for pertinent material. There are about 1100 such titles.

\*The counts for these tables were made on March 15, 1974. As the constant *Current Contents* readers will know, slight changes in journal coverage (addition of new titles, deletion of dead titles, transfer of coverage between editions) are almost continuous, as reflected in the *Journal Coverage Changes* notes published in almost every weekly issue. Citation of these figures must take this fact into account.

been aware that our policy of "core" coverage of the literature has not satisfied some potential users of ISI services. In the commercial world, any application of a product (or of a competitor's similar product) may be considered useful information. Thus, pharmaceutical companies may be interested in apparently trivial and repetitious accounts of drug product usage (their own and others') no matter how obscure or lightweight the journal. A research pharmacologist would discard them as useless. This type of redundancy may be useful, desirable, or necessary for marketing and other industrial purposes. A *Technology Citation Index* would expand our coverage of technology and applied science with material that can't economically be justified from the viewpoint of *Current Contents* and *Science Citation Index*. Those services do now cover border areas between 'basic' and 'applied'. Con-

sider, for example, journals like *Review of Scientific Instruments*, *Proceedings of the Institute of Electrical and Electronic Engineers*, *Journal of Applied Chemistry and Biotechnology*, etc. But this overlap can be justified only for coverage of high-quality journals. Extending coverage into technology and trade and patent literature would mean sacrificing other basic journals not yet covered in our system. New ones crop up each year.

As a self-confessed entrepreneur,<sup>4</sup> as an information scientist/technologist/librarian still challenged by the impossibility of total coverage, the concept of a *Technology Citation Index* interests me greatly. But as a practical businessman, I know that *TCI* must also interest the marketplace. This essay is the first of what may be several attempts to discover (or to develop) such an interest. Let me hear from you.

1. Fugmann, R. & Poloss, G. Possibilities and limitations of delegated literature searches by computer. *Angew. Chem. Internat. Ed. English* 12(11):882-4, 1973.
2. The use of the word 'engineers' among information scientists sometimes puzzles certain engineers themselves. Many information scientists when speaking of engineers, unconsciously mean 'research engineers'. Among these are engineering scientists concentrating in mechanical physics, materials science, aerodynamics, electrical engineering, chemical engineering, etc. Such men may be as browsing-prone as any basic scientist in other fields. However, the preferred sources of information of 'working engineers' are

likely to be manuals, specification sheets, trade publications, manufacturers' technical brochures, patents, etc.--all geared to location of specific data or information.

3. Garfield, E. Breaking the subject index barrier: a citation index for chemical patents. *Journal of the Patent Office Society* 39(8):583-95, 1957.
4. Garfield, E. "The World Brain as Seen by an Information Entrepreneur." Paper presented at a Symposium on Reorganizing Information Resources to Improve Decision Making, Annual Meeting of the American Association for the Advancement of Science, San Francisco, February 27, 1974.