CURRENT COMMENTS

Introducing PRIMATE™
—*P*ersonal *R*etrieval of *I*nformation by *M*icrocomputer *A*nd *T*erminal *E*nsemble

Number 29, July 17, 1978

On several occasions I've suggested that the rapid decrease in cost of minicomputers would have a great impact on all existing methods of retrieving information,[1-2] including on-line systems like *Sci-search*® and Medline.

A. E. Cawkell, ISI® 's Director of Research,[3] has been working on a microcomputer retrieval system called PRIMATE. The essay which follows is an effort on my part to do some market research for him. We would like to know if there is any serious interest in personal search systems.

After you scan *Current Contents*® each week, you write for reprints, make photocopies in your library, or order tear sheets from ISI. When the reprints arrive, you scan most of them quickly. Then, if you are like most readers, you "file" them. Or you may just note the article in the library and file an abstract.

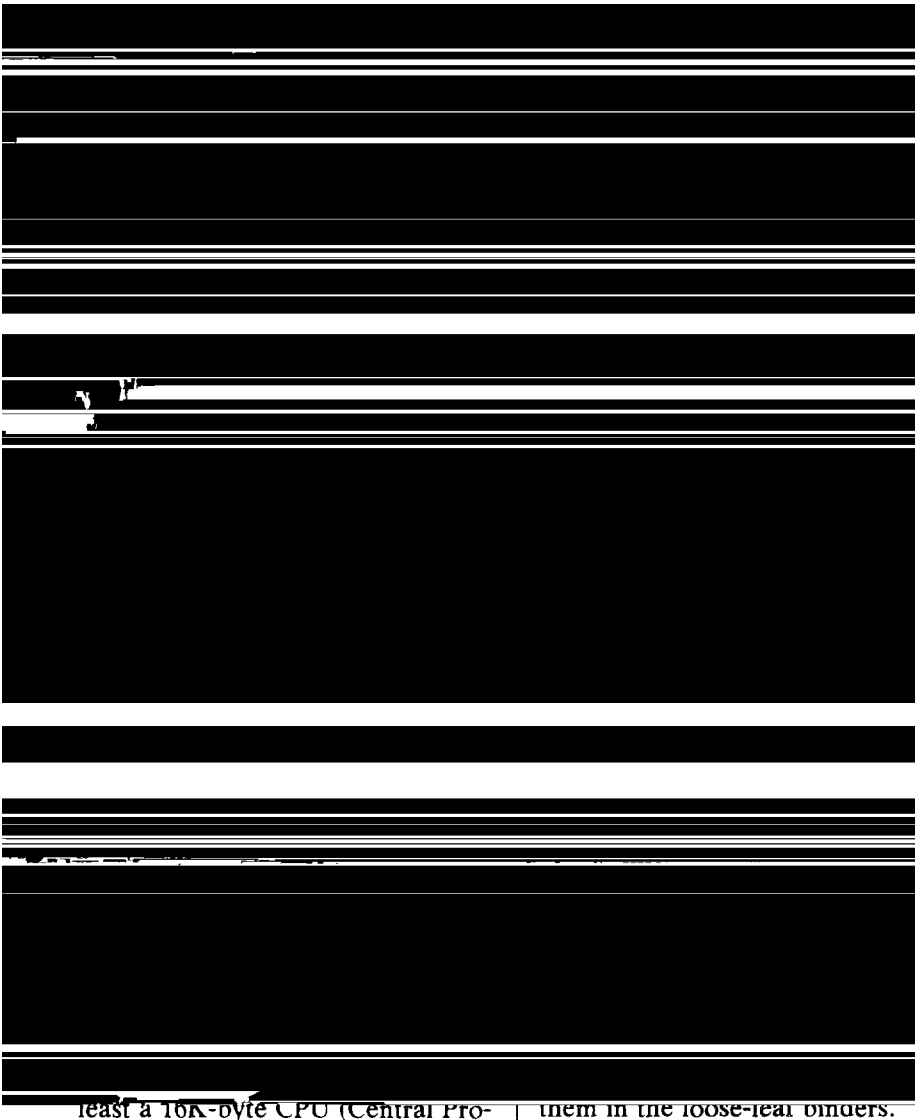
I've said a great deal about reprints in the past. But I've avoided a discussion of methods of retrieving or storing reprints.

The literature is overloaded with articles on all sorts of filing systems. It is precisely because of this that I am not citing any of them here.

Some people have undoubtedly succeeded in setting up and maintaining elaborate filing systems. Perhaps one of the most elaborate is the system established by Hans Selye in Montreal.[4] And I have seen many large indexed files of reprints collected by individual scientists. Some of these were developed over a 40-50 year period.

Many teachers maintain file folders of broad general categories corresponding to lectures they give. Reprints are added to these folders as acquired. They are reviewed when the appropriate lecture has to be prepared.

But while there are numerous well-organized reprint collections, most scientists lose their initial enthusiasm. They wind up filing reprints alphabetically by author. Still other scientists and especially physicians start out with the best intentions, but in the hustle and bustle of everyday research or clinical practice, they abandon any attempt to be systematic. They never seem to put their reprints into any kind of file. Their reprint "files" cover their



least a 16K-byte CPU (Central Processing Unit), 9" CRT (Cathode Ray Tube) display, double-density dual "floppy" magnetic disc, mass storage device, and a keyboard. It would be able to store information on 10,000 papers, indexed by up to ten terms per paper.

But the key to an effective PRIMATE system is software. I use them in the loose-leaf binders.

Alternatively, you could co
mand PRIMATE to display an
dexing term along with the num
of articles you have stored under
If you have used authors' names
indexing terms, you could le
whether the file includes papers
a particular author and if so, h
many. You could then display

them in your binders.

PRIMATE is a rather straightforward, simple system of personal information retrieval. But it could provide several sophisticated functions which are needed for an effective and convenient system.

For example, suppose you display the indexing term "virus". You find out there are 35 papers indexed under this term. When you put the first virus-related paper in your file, "virus" was an adequate indexing term. But now it is too general for your needs. So you review the 35 titles on the CRT screen and assign more specific terms, such as adenovirus, RNA virus, etc. To do this, you simply type in the new indexing terms. PRIMATE reorganizes itself so that your next search can be more specific. Since they are filed by number (or by author), the papers themselves do not need refiling.

Searches could be very specific, both as to subject matter and chronology. For example, you could ask to see adenovirus papers published after or before 1977.

We are also considering an optional updating service called ASCAMATE. This would help keep you aware of new articles pertaining to your interests. You give us a profile (made up of key words, citations, authors' names, etc.). ISI's computer will match the profile against our weekly file of new articles.

As we do in our *ASCA*® service now, we would periodically send you descriptions of pertinent current articles. But instead of printdisc." You plug the disc into PRIMATE, observe the records on the screen, and place those of interest in temporary store. You can then obtain the reprints of the articles you want by writing authors. Or you may obtain them from your local library or from our *OATS*® library service. When the reprints arrive, you would number them serially and file them in numerical order. You would then recall the appropriate records from computer store, add your indexing terms, and send them automatically to main storage.

Although I have discussed PRIMATE in terms of retrieving *articles,* it is probably apparent that you can use it for filing books, letters, drawings, etc. And if your collection of information includes many different types of documents located in different places, you can create a numbering system which will tell you where and what something is. For instance, the numbers 1-3000 could be reserved for reprints, 3000-4000 might indicate books in the department library, and 4000-5000 would be correspondence, etc.

Undoubtedly many readers will think that PRIMATE is a fine idea. But from experience they realize that effective indexing can be a problem. How would a computerized system overcome that difficulty? The answer is that the system may not but an ISI information specialist can.

At the time of the system's delivery, one of our specialists would call upon you to describe

discussing your retrieval needs, the specialist would recommend appropriate indexing procedures.

I could suggest that the simplest title-word indexing would be as effective as most controlled vocabulary systems in existence. Most of you would not believe me. And yet that is precisely what we do with our Permuterm® system. On the other hand, title-word indexing can be easily augmented by "enrichment." We do this for the humanities literature. Or you might prefer to use author-assigned indexing terms, as emphasized by such journals as *Proceedings of the National Academy of Sciences* or *Tetrahedron*. The subtleties of indexing are the subject of thousands of papers in the literature of information science. Eventually, if you would use a system like PRIMATE, you would have to select *some* indexing system. That may be the hardest decision of all. I remember the dozens of scientists who were interested in our *ASCA* system, but were never willing to prepare a profile.

Once you do decide on a preferred indexing philosophy, you would enter a limited number of papers into the system. Retrieval on this small file would be tested to identify peculiarities or problems. When you decided the system was working effectively, you could begin to enter information regularly. Or we could train your assistant to do the same.

Some readers may feel that such a system could help retrieve the information buried in their reprint

to put hundreds or thousands
older papers into the system? V
would also offer to index yo
backfiles. Since this is *your* pe
sonal system, you would be co
sulted at the initial indexing stag
But once that's done, you cou
have a complete backfile organiz
and easily retrievable.

The cost of a PRIMATE syste
is still somewhat uncerta
However, based on present equi
ment costs, the rental charg
would be in the range of $100-$1
per month including installati
and software.

The ASCAMATE updating se
vice might run $400 per year f
weekly updates or $250 per year f
less frequent monthly updates. T
backfile service, of course, wou
be subject to quotation, dependi
on the state and size of the file
This could easily involve a fe
thousand dollars, unless you g
student assistants to do the work.

If you compare these costs to t
price of a *Current Conter*
subscription, then you may be in
state of shock. You may in fact
forced to re-evaluate your own e
isting manual system. You may
surprised by what it is really costi
you to maintain and use it. Mo
people will not have any way
compare since they have no existi
system at all.

PRIMATE hardware and so
ware will not be absolutely uniqu
I fully expect that microcomput
manufacturers will design softwa
packages that handle most ever
day retrieval problems. Even t
maintenance of an up-to-date a

problem in every lab. But I recall myriad personal indexing systems—including those based on edge-notched cards, peek-a-boo, delta cards, etc.—that are now defunct. So, I am convinced that microcomputers will only be successful when the software and in-

task.

If you have any interest i PRIMATE or other personal infor mation systems, please write to m in Philadelphia or to Mr. A. E Cawkell, Director of Research, ISI 132 High St., Uxbridge, Middlesex England UB8 1DP.

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   [Reprinted in: **Garfield E.** *Essays of an Information Scientist.* Philadelphia: ISI Press, 1977. 2 vols.]
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