

## Off-site indexing: a cottage industry \*

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A major part of the data-base production function at Management Contents is done through a cottage industry. Off-site indexers and editors produce approximately ten thousand citations on a bi-weekly and monthly update basis for two data bases in the areas of business and computers. The success at Management Contents with off-site indexing is closely tied to the ability to attract qualified indexers who produce the highest quality abstracts while writing part-time at home. Off-site indexing enables savings in office space, furniture and equipment costs, salaries and overhead, and creates a talented pool of individuals for special contract work. Communications, quality control, and turnaround time are problems to be dealt with when staffing out-of-house.

This paper presents a brief and informal overview of the 'cottage industry' aspect of data-base production at Management Contents. A description of the development and growth of our cottage industry practices in the context of our specific product requirements and local resources will explain why we do all of the indexing and abstracting of our business, law, and computer literature, and about eighty percent of our editing, using part-time people working at home.

Management Contents, a division of Ziff-Davis Publishing Company, provides a variety of information services and products. Our major products are two data bases: Management Contents and The Computer Data Base. Management Contents is a broadly-based bibliographic text data base on business, management, and law relating to business. The new Computer Data Base is a bibliographic text data base on all aspects of computers, telecommunications, and electronics. In addition, we have four print products. Three are bi-weekly table of contents current awareness publications: *Legal Contents*, *Management Contents*, and *Computer Contents*. The fourth, *Business Publications Index and Abstracts* (BPIA), is a print version of the Management Contents business data base.

By most standards, Management Contents is a small company in terms of both office space and staff. When I joined Management Contents four years ago there were five full-time employees and ten part-time contractors who worked at home

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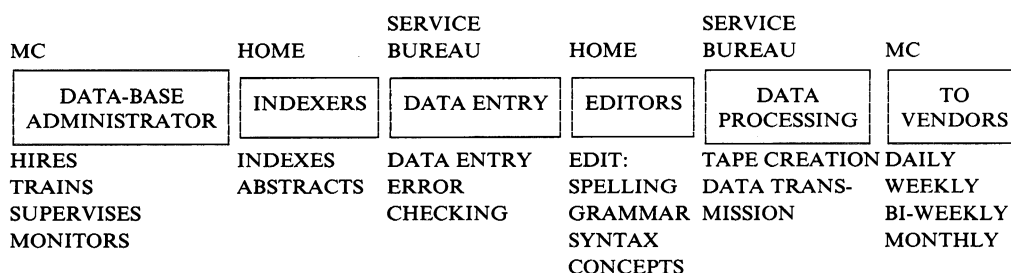


Fig. 1. Management Contents data-base production sequence.

as indexers. There was one data base covering about 250 publications, and one print product. Now there are seventeen full-time employees in-house and over sixty indexers and ten editors who work at home providing abstracts for the two data bases. Each data base is managed by one data-base administrator and a technical assistant in-house. While we have certainly grown, individual departments remain small, consisting of one or two persons.

In order to produce the two data bases and the related table of contents print products, our office receives on a daily basis over 1,700 journals, as well as many other publications including proceedings, courses, tabloids, research reports and books. The titles and publication dates of each of these are logged in on a computer and batched (usually five to ten publication issues per batch) to send home to our Management Contents indexers. Indexers are required to return the finished work well within a week's time (a week is usual for longer publications such as quarterlies or annuals). Most indexers work an average of twenty hours per week, but times may range between about fifteen and thirty hours.

Although the major portion of the time spent creating the data-base products is done in the home, controlling and maintaining the efficiency of a productive cottage industry staff requires a major training, supervisory, and coordinating effort based in the office. As may be seen from the block diagram in figure 1, the administrator for each data base is a manager who hires, trains, and monitors the indexers and editors, and who coordinates the process by which incoming publications are transformed by the indexers, editors, and our service bureau (data entry and data processing) into a finished tape which may be mailed or electronically transmitted to the data-base vendors.

### The data-base administrator

The data-base administrator is generally a person from the ranks of information science or a librarian with a good searching or data-base background in addition to a strong editorial interest and talent. At Management Contents, the data-base administrator must advertise for work-at-home indexers/abstractors, interview them, prepare contracts, train them, monitor their productivity, main-

tain a high level of quality control, and conduct follow-up workshops throughout the year. Statistics on indexer productivity are compiled monthly. On the basis of this information, the data-base administrator ranks the indexers with respect to the number of articles completed each month, and the cost of each article. These numbers are then correlated with the level of complexity of the publication and the subject matter covered. The data-base administrator also manages the flow of information through the data processing service bureau, and thus must understand the DP functions in order properly to schedule the processing operations and the creation of tapes.

### **The off-site indexer**

We have been able consistently to attract high-caliber indexers/abstractors at Management Contents. We are pleased with the quality of their indexing and abstracting and have determined from experience that the general level of their productivity is quite high relative to that of similar individuals working full- or part-time in an office environment.

Periodic surveys of our indexers have revealed two rather interesting and consistent 'indexer profiles' which we believe reflect some unique characteristics of our local environment. Management Contents is located about twenty miles north of Chicago in the heart of the affluent North Shore suburbs. We advertise locally and therefore attract the majority of our indexers from within a two to five mile radius from the company. We advertise for abstractors in the fields of business, management, and law, stating that it is at-home work demanding approximately twenty to thirty hours per week. We ask for a BA/BS diploma as a minimum requirement in a related field, with an MA preferred. We consistently attract individuals with an MA or an even more advanced degree. The people we hire truly enjoy their field of interest, and find writing an abstract from published material a rather easy and enjoyable task. We therefore manage to attract individuals whom we consider ideally suited to the particular tasks of indexing, abstracting, and editing.

The indexer profile for the Management Contents business data base is quite distinct from that for The Computer Data Base. The typical business data-base indexer is a woman, very well educated, in her mid-thirties, and with two children at home. She has a Masters degree in a specialty we cover on the data base (usually accounting, marketing, or finance), and often also has an MLS. She enjoys the financial rewards from a part-time salary, but her main interest is in keeping her mind active, using her education, and enjoying a status beyond housewife while her children are home. As often stated, she especially enjoys (while being paid) the opportunity to learn and to keep abreast of all of the topics, current events, theories, and new ideas and products in her field of interest.

The typical Computer Data Base indexer is from a somewhat different population. Because so much of the information on The Computer Data Base is so

highly technical and requires technical knowledge of systems, theories, and models, we require (as a minimum) an advanced degree in computer science or related field. We have to advertise in the city papers in addition to the local papers in order to attract the number of indexers necessary to produce the three thousand citations for the data base every two weeks.

The typical indexer of The Computer Data Base is a man, very well educated, in his late twenties or early thirties. He has another job, usually in systems, retailing, or education. He seems to be quite pleased to be paid for doing what he finds enjoyable already: keeping up with the current literature in his field. He usually works an average of fifteen hours per week. He is clearly a subject specialist and indexes those publications which appeal directly to his interest and understanding.

### **The economics of off-site indexing**

Currently, we produce approximately four thousand citations containing 100–300 word abstracts for the Management Contents business data base per month. We produce, on a bi-weekly basis, about six thousand citations per month for The Computer Data Base. Writing informative abstracts filled with appropriate keywords to maximize precise free-text retrieval requires a great deal of focused attention. It is not the type of work which leads to a consistent high quality of writing if done eight hours a day, forty hours a week. We have had a few very ambitious abstractors at Management Contents who tried working a forty-hour week at home. None lasted beyond three weeks. Each simply felt it was too grueling.

Our product and office staff has nearly quadrupled in size over the last four years. As is the case in any company, our goals are to keep quality and productivity high at the lowest possible cost. Our experience is that the best method to achieve this and still maintain our volume of approximately ten thousand citations per month between the two data bases, is to keep the indexing staff out-of-house. This practice conserves office space and equipment, and keeps salaries, equipment, and managerial problems (not the least of which is motivating productivity consistent with our standards) to a minimum.

The indexers are trained by the data-base administrator in small groups in one three to four hour session. They are given a detailed Indexers Manual which explains all aspects of indexing and abstracting for the data base and a thesaurus designed for users to improve their accuracy and efficiency in searching the data base. After they have successfully completed the training program (for which they are paid), and after we have determined the speed, quality, and accuracy of their work, they sign a contract to become an independent contractor for the company. This training and evaluation process usually takes from one to two weeks. They are paid on an hourly basis, and depending on the level of complexity of the articles, they index and abstract from two to seven articles per hour.

Very few decide not to remain, and only a few are deemed clearly not suitable.

Those who apply are generally quite capable of handling the work load and meeting the standards determined by the company.

The majority of editors are promoted from the ranks of the indexers. They go through a similar training program, and are given detailed editor's manuals. In addition to a productive and knowledgeable staff of indexers and editors, we have an established pool of talented individuals which we use for special-purpose contract work.

The 'up' side of off-site indexers, then, includes:

- 1) savings in office space
- 2) savings in salaries, benefits and overhead
- 3) savings in furniture and equipment costs
- 4) savings on in-house managerial staff
- 5) high productivity
- 6) established pool of contractors for special editorial projects
- 7) established pool of talented and knowledgeable individuals already trained for possible editorial and administrative positions within the company.

The problems that we have encountered with out-of-house indexers have chiefly been in communication, quality control, and to some extent turnaround time. The editors and the data-base administrators must provide feedback to indexers through written notes and telephone conversations, and short weekly meetings when they return their work. The spontaneous and immediate feedback which is often easily accomplished with in-house employees is compromised a bit with off-site indexers. While we have been able to maintain our final production quality standards, it is sometimes difficult to predict and control the timing of their production on a day-to-day basis. In short, quality is maintained, but it may sometimes take longer than we would like.

The major problem is turnaround time for abstracted articles, which translates to currency of information on the data bases. Indexing and key entry of the citations are part of a two-step process at Management Contents. The indexers turn in their work on a daily or weekly basis. It is then batched and sent every night to the service bureau where it is entered key-to-disk. It is then sent to the editors for corrections. This procedure is repeated until the data are satisfactorily 'clean' for updates to the data base. For the Management Contents data base, this procedure currently causes a four to six week lag from the time data are indexed to the time they appear on the data base. Daily transmission of unedited information from Management Contents to Newsearch has reduced this lag time to one week. For The Computer Data Base, which is updated bi-weekly, this lag time can be from one to three weeks. Daily transmission to vendors for both data bases is scheduled. This will reduce the lag time to less than a week.

It is possible to reduce the costs involved in this two-step process by having the indexers abstract and index at the terminal. However, while this may reduce the key-entry time, this requires a combination of skills and attention to rows, columns, and special formatting which may slow the initial indexing and abstracting quite a bit. We are currently experimenting with this procedure and 'costing' it out. Reports from a colleague in a similar business where this procedure has

been tried for nine months indicate that there is 'enormous' difficulty finding individuals who could both abstract and key enter without an extremely high error rate and greatly lowered productivity. They felt that it was an extremely costly process to train these individuals to follow correct data entry procedures and at the same time maintain quality in indexing and abstracting. The jury is still out as far as they are concerned.

Maintaining the high quality, high productivity, and high volume of the indexing and abstracting currently enjoyed at Management Contents at a reasonable cost is no easy task. Constant monitoring and experimenting with new alternatives is critical to the success and future growth of the data-base production.