

ESTABLISHING AN AUSTRALIAN SOCIAL SCIENCE DATA ARCHIVE: PROGRESS AND PLANS

ROGER G. JONES

SOCIAL SCIENCE DATA ARCHIVES
AUSTRALIAN NATIONAL UNIVERSITY

Progress

Up to 1974, there appears to have been little interest in Australia in accessing secondary data. The Department of Political Science in the Research School of Social Sciences at the Australian National University held a Category C membership of ICPR from 1965 but access was largely limited to members of that department and certainly only to members of the university. The only data that was generally available at that time was the 1966 Census data distributed by the Australian Bureau of Statistics.

During 1974, four events occurred which provided the stimulus for a wider debate on the need for an Australian data archive:

- i) a second department, the Department of Political Science at the University of Melbourne, became a member of ICPR;
- ii) ICPR decided to reclassify Category C schools in Australia (and elsewhere) to Category B institutions for 1975-76 with a consequent increase in membership charges from \$2000 to \$3500 per year and further increases to follow. Almost simultaneously they proposed a new arrangement under which any number of Australian institutions could form a joint organization for Australia at a total annual subscription of \$4000, subject to one of them acting as a clearing-house for the whole group;
- iii) The Survey Research Centre was established at the Australian National University;
- iv) Don DeBats, Senior Lecturer in American Studies and Politics at Flinders University, presented a paper to the Academy of Social Sciences recommending the establishment of an Australian data archive.

Without any one of these factors, it seems doubtful whether any progress would have been made for some time towards establishing an archive. DeBats had approached the National Library two years earlier with a suggestion that they take out a national membership of ICPR but his was a lone voice and it was felt that it would be hard to justify offering a new service, and one which would be a totally new departure in the type of material offered, when there was apparently no demand for it. At that time, the ANU was more concerned that any national membership should not adversely affect their own arrangements than with encouraging wider access. The proposed increase in charges and the presence of at least one other institution to share these charges and maintain them at the previously acceptable level provided the impetus needed for a national membership to be considered. The newly established Survey Research Centre had as one of its objectives the collection of information on survey data that could be made available for secondary analysis and was seen as the logical location for the national clearing-house.

As it was, following some preliminary investigation of possible alternatives and canvassing of the level of interest, a meeting was arranged for 16 February 1976 at the ANU and representatives of thirteen institutions attended. Eleven of these expressed an interest in joining an association of research and teaching institutions formed to take up a national membership of ICPSR (as ICPR was now called). This was taken out in May 1976 under the name of the Australian Consortium for Social and Political Research Incorporated (ACSPRI). Secondary objectives of this organization were

- i) to collect and disseminate information relating to machine-readable social science data;
- and ii) to investigate the desirability and feasibility of establishing an archive of Australian social science data in Australia or elsewhere and, if it is found desirable and feasible, to facilitate the establishment of such an archive.

Over the last six years, ACSPRI has grown from the two previous ICPSR members to nineteen member institutions at present, including twelve of the nineteen universities in Australia. Each member pays an initial joining fee of \$150 and all share equally in the costs of ICPSR membership. Thirteen ACSPRI nominees have attended ICPSR Summer Training Programs. Data exchange agreements have been established with the Roper Center and the SSRC Survey Archive and agreement to redistribute data acquired from the Data and Program Library Service has been obtained. A Newsletter is produced twice yearly and distributed through representatives in member institutions and to other interested bodies.

Over the years, the number of orders for secondary data has remained stable at the level of about 9 a year, although the number of data sets distributed grew from 21 in 1976 to a peak of 85 in 1979 before dropping back to only 27 in 1980. In general, the pattern has

been that a member will place a large order for data sets soon after joining, and then orders will be for one or two data sets only.

Table 1. ACSPRI Membership and Level of Use

Year	No. of members at 31 Dec	No. of orders	No. of data sets
1976	9	7	21
1977	10	8	46
1978	13	10	69
1979	16	7	85
1980	19	9	27

Although ACSPRI has been successful in providing Australian researchers with access to overseas data, it has been far less successful on its home ground. The ANU Survey Research Centre was relied on to undertake any data location and acquisition procedures but found that this was generally impossible due to its other commitments. As a result very few Australian data sets have been acquired to date. Excluding Australian census data, only three Australian data collections are available through ICPSR and only a further 24 data collections are available from ACSPRI.

If this situation had continued for much longer, I believe that membership of ACSPRI would have started to decline, probably quite rapidly. Already one of the founding members has dropped out because of lack of interest within the institution. For the great majority of academics, researchers or teachers, local data relating to local characteristics and issues is surely preferable to overseas data. In order to flourish, an archive must substitute for or add to the researchers' data collection activities, as well as provide new opportunities for data analysis, and these possibilities are more obvious with local data.

This situation now has a good chance of being rescued following the recent decision of the ANU to replace its Survey Research Centre with the Social Science Data Archives. The Archives will have a staff of six initially and should be fully operational early next year. In preparation for this, some preliminary investigations have been undertaken. In particular, sources of information on survey work in Australia have been examined and procedures to follow in acquiring, documenting, advertising and distributing data sets have been considered. The results of these deliberations and some of the questions they raised are presented below.

Locating Survey Data through Published Sources

1. Government Collections

"The Australian Bureau of Statistics is the official statistical organization for the Federal and State Governments. Its main function is to collect statistical information from a wide variety of social and economic areas and to compile statistics and disseminate them to interested users both within the Government and the community in general.

The ABS publishes currently almost 1900 statistical publications - either monthly, quarterly, half-yearly, annually or irregularly under approximately 700 different titles."

(ABS Catalogue of Publications).

The ABS is the major data collection agency in Australia. However to date, the Bureau has taken a very strict line on confidentiality of respondents and has been unwilling to release data in machine readable form in general and certainly not individual record data, de-identified of course. Data from the Australian Censuses of 1966, 1971 and 1976, with 1981 in a few years time, has been made available on magnetic tape aggregated at least to Census Collector's District level (an average size of 200 dwellings). From the 1976 Census in particular, Matrix Tapes containing counts of individuals or dwellings in cells of multidimensional tables were also made available, although in a format which required a considerable programming effort by the user to read and produce meaningful output. These data tapes are already held by the Archives. However, such important studies as the 1974 General Social Survey, the 1977-78 Australian Health Survey, the 1974-75 and 1975-76 Household Expenditure Surveys, the monthly Labour Force Surveys and many others are inaccessible and likely to remain so. Attitudes are changing however and there is some possibility of a sample of individual records from the 1981 Census being available for public use. In addition, the ABS will under certain conditions and when resources allow, conduct some analyses of individual record data on behalf of researchers.

Apart from the ABS, there are many other Government agencies at the Federal and State level who undertake data collection activities, and these agencies are generally more willing to make the data available to academic researchers. Until recently, information on these data collections was not widely available in any systematic form. However, Statistical Co-ordination bodies have recently been established by the Commonwealth and State Governments and each of these, with the exception of Tasmania, has compiled a register of statistical collections undertaken by the various Departments and Authorities of their respective governments. Entries are generally organized under the ABS Program Code or Department, and include the title, frequency, time period covered, availability and a contact officer. At the present

time each of these bodies uses a different data collection instrument and publishes its information in a different form, but there is some discussion of a unified approach for the future, provided that cuts in staff and available funds allow the continuation of these projects.

2. Opinion Polls

In the period 1941-1971, only one organization - Roy Morgan Research Centre Pty. Ltd. - conducted regular surveys of public opinion in Australia on an interstate basis. Two further polling organizations - Australian Nationwide Opinion Polls (ANOP) and Irving Saulwick and Associates - entered the field during 1971, and McNair Anderson Associates Pty. Ltd. began regular polling in 1973. The recent publication "Australian Opinion Polls 1941-1977" compiled by the University of Sydney's Sample Survey Centre provides a subject classification and keywords index to the questions included in the polls conducted by these four organizations up to 1977.

Data from about half of the 190 surveys conducted by the Roy Morgan Research Centre before 1968 are deposited with the Roper Center and can be made available to Australian researchers through a data exchange agreement between Roper and ACSPRI. Irving Saulwick and Associates' "Age Poll" is conducted in association with the Political Science Department at the University of Melbourne and permission has been given for these data to be made generally available two years after the completion of fieldwork. Negotiations are currently underway with the other three polling organizations to try to establish similar agreements.

3. Academic Collections

In a large and sparsely populated country like Australia it is very expensive to build and maintain a national fieldforce of interviewers for use in ad hoc surveys. As a result, any national surveys and the great majority of large regional surveys requiring personal interviews are contracted out to commercial market research agencies for the fieldwork. The only alternatives for large scale survey work are mail self-completion or other self-completion approaches such as surveys of school children conducted under supervision in the classroom. The vast majority of survey work conducted from the academic sector is however based on small samples from small geographic areas.

Information on the data collection activities undertaken by the academic sector is scattered through a whole range of publications such as annual reports of departments and institutions, reports of the granting bodies who provide funding for much of this research and the journals in which the results of the research appear. The need to provide some form of central register to these activities has been recognized in recent years and some progress has been made in this direction.

In 1975 the Social Welfare Commission produced the first edition of the Social Welfare Research Bulletin, which sought to provide a concise listing of Social Welfare research throughout Australia. Subsequently, the Department of Social Security took over production of this Bulletin and published updated versions in 1977 and 1981. Unfortunately, the latest edition is to be the last.

A number of other government departments provide bibliographic services on the areas of their particular interest. For example, the Department of Education maintains a Directory of Researchers and Research in Education; the Institute of Criminology scans publications for Australian or Australian-related criminological information and aims to collect copies of all publications relating to Australian criminology; the Department of Employment and Youth Affairs Library compiles quarterly bibliographies on a number of topics. However, the entries in these sources are generally limited to author, title and publication, and are thus rarely useful as information sources for the location of machine-readable data files.

The Survey Research Centre undertook two projects in an effort to provide more information on academic survey activity. The publication "Australian Social Surveys: Journal Extracts 1974-78" is based on a search of thirty Australian social science journals published in 1974-78 for articles reporting the use of survey data. Approximately 600 entries are organized under subject headings and include author, title, journal reference and, where available from the article, the geographical coverage, date, population, and sample of the survey. The second project, the "Inventory of Australian Surveys", was designed to provide more detailed information on survey work and used a mail questionnaire approach. Heads of social science departments in universities and colleges of advanced education were requested to give names and addresses of staff and postgraduate researchers who had conducted surveys from that department since 1970. Individual researchers were then contacted by mail and requested to give a detailed description of their work on an inventory questionnaire. Details of some 700 surveys are currently held on a computer file.

A comparison of the survey references attained in these two projects showed that both approaches suffer from undercoverage. Using details of the publications provided in the Inventory responses, a brief analysis of written items resulting from these surveys was carried out. Based on 617 entries, it was found that about one-third (210) of the surveys had not yet been reported at all, while about one-quarter (145) had resulted in journal articles. Of this latter group, at least 107 had published in Australian journals although only 69 were covered by the thirty journals selected for the Journal Extracts. To have located all of these references from a journal search would have required a doubling of the Australian journals covered, and inclusion of some overseas journals. Table 2 provides details of the types of written reports used.

Table 2. Written reports of surveys included in the Inventory.

	<u>No. of surveys</u>
No written items reported	210
Journal articles - Australian journal	107
- Overseas journals only	19
- Others only - journals not checked, could be either	<u>19</u>
	<u>145</u>
Books and monographs	63
Academic departments or institutional reports	83
Government and other reports	72
Published Conference proceedings	24
Unpublished Conference and seminar papers	27
Theses	95

N.B. Each type of written item reported counted for each survey.

On the grounds that there is clearly some time lag between the conduct of the survey and the appearance of a written report, an examination of written output by date of completion of fieldwork was made. Surveys resulting in theses, and those in which the dates of fieldwork or type of output was not specified were excluded. As expected, a higher proportion of surveys conducted before 1975 resulted in journal articles, but this was still only 41 percent of all these surveys, and 30 per cent appear not to be written up at least 4 years later (Table 3). We have not as yet made any qualitative judgements about the merit of these surveys and it may of course be the case that it would not pay the archive to be too concerned about such work.

Table 3. Written output by date of completion of fieldwork.

Completion of fieldwork	<u>Per cent of surveys</u>				N
	Written up in Journal Article	Written up in other form	Not written up		
Before 1975	41	29	30		132
1975-76	28	32	33		130
1977-78	21	29	50		184
After 1978	6	16	78		32

On the other hand, a journal search has some advantages in terms of coverage over the survey approach, due largely to the problems of non-response. From a sample of 103 survey reports in the Journal Extracts we found 9 with no address given and 13 in departments which had not been surveyed. Of the 81 remaining, 50 were not reported in the returns from departments, although 14 of these were conducted by researchers who were included in the Inventory for different studies. Of the 31 studies reported on the department returns, 22 summaries were returned by principal investigators.

Plans

While information on the data collected by government bodies, market researchers, academic researchers and other social science research bodies has improved considerably in Australia over recent years, there is a need to co-ordinate these activities and, if possible, establish a uniform approach. The concept of the Data Clearing House for the Social Sciences in Canada is I believe appropriate for Australia, although Canada has the advantage of a well established network of data archives. The Data Clearing House can thus concentrate all its resources on the provision of information services, for which (in 1975) it employed a full-time staff of six professionals, engaged in the developmental and service activities of the program.

The broad objectives of the Canadian Data Clearing House are:

- "1. the preparation of an index of quantitative social science data holdings that exist in machine-readable form and are to be found in Canadian universities, as well as in non-profit research agencies and other bodies conducting social science research;
2. the collection from federal and provincial government departments of a continuing description of their holdings and the performance of a liaison role between individual scholars and government departments;
3. the provision of information in response to individual inquiries, referring the inquirer to the source but not attempting to provide the inquirer with the actual data; and
4. the provision of technical information necessary for the more effective use of the data."

Bulletin, Data Clearing House for the Social Sciences, Ottawa, Nov. 1975.

While our objectives have yet to be formulated and agreed, the provision of information about available data is surely necessary for determining a sensible acquisition policy. It would build on the work described above, although there is clearly a need to modify the information collection procedures used in our previous inventory work. A

balance must also be found between resources allocated to this activity and resources allocated to data acquisition, processing and dissemination, since we, unlike the Data Clearing House, will be attempting to provide the inquirer with the actual data. With this modification, the objectives stated above provide the basis for our planning at this time.

Inventory Plans

In recent years, there has been a strong movement among data archivists towards standardized documentation and increased bibliographic control of machine-readable data files (MRDF) with the hope that, ultimately, international union listings of available data may be produced. With this in mind, we felt that a new information system should be compatible with overseas developments where practicable. Although we have produced our own system for two bibliographies of Australian surveys, it is relatively unsophisticated and inexpensive to abandon at this stage. For all practical purposes, we are able to start from scratch.

In looking for a suitable description scheme, we required a form which could provide output in the form of a bibliographic citation; a title page; a full description of the study methodology, and content, and associated publications for inclusion in the codebook; and a more compact description for inclusion in a published inventory or catalogue of data holdings. Appropriate indices would also need to be generated by machine from the entry. The Study Description Scheme developed at the Danish Data Archives appears, with some reservations, to satisfy these needs.

The Study Description Form is essentially a more detailed version of the questionnaire used in our previous inventory work and consequently we are familiar with its style. The questionnaire used there was designed as an instrument which would be completed by the researcher, and returned to us for almost direct processing. In theory, our intervention would be minimal; in practice, it was not. To some extent it may have been due to faulty design, but returns required a significant amount of editing to give consistency, resulting in an untidy copy being sent for processing and thus more editing on the computer. It is therefore anticipated that the description for each study will be completed in-house, and will be based on published reports and other descriptive materials requested from the investigator.

Based on a very limited trial with three studies, we found only a few problems in completing the SD form in this way, although it is not entirely suitable for our purposes. Some sections in Part 2, Analysis Conditions, and Part 3, Reanalysis Conditions, will be omitted, and Part 5, Variables Included, will be compiled as listings of background variables and main variables/topics rather than use the categorized responses provided. The main reason for the latter is that we do not plan to implement a subject classification scheme immediately (preferring to wait for some recommended standard) and will use the main variables/topics as the basis for a keyboard index. As recommended

by users of the SD Scheme, Section 101 will be used to include the necessary elements of a bibliographic citation when these are not already included elsewhere, although an additional section has been added for details of the producer of the MRDF to provide a producer statement.

At this stage therefore it seems likely that the SD Scheme will be adopted by the Australian SSDA. There is however one reservation in our minds about adopting this scheme. At present, use of, and interest in using, the SD Scheme predominates in the European archives, with only one archive on the North American continent, the Leisure Studies Data Bank in Waterloo, using it. Clearly a standardized system has to be widely adopted to be a standard. Given the reported interest in establishing such a standard, we wonder whether the SD Scheme is being generally considered outside Europe, particularly in the United States; and if not, why not? Comments from conference participants on this topic will be very much appreciated.

Having chosen what we consider to be a suitable study description format, we are still faced with the problem of locating studies for inclusion in the inventory. As indicated by our previous experiences described above, providing reasonable coverage of the academic and other research agencies conducting social science research may be difficult. Again looking to the Data Clearing House model, a national network of designated correspondents and technical co-ordinators may be the answer and will certainly be tried. The SSRC Survey Archive also has a network of Archive Representatives covering university and polytechnic social science departments to publicize the Archive's services and acquisitions and to simplify request procedures. The basis for such a network is already established by the nineteen ACSPRI representatives, one for each member institution, and efforts will be made to expand and develop this network.

Compilation of the Inventory is seen to require three stages of information collection. Firstly, a record will be kept of current research and completed research comprising little more than names and addresses of principal investigators to be contacted, acquired through the network of representatives, reports of grant agencies and other information sources described earlier. Essentially, a mailing system for recording details of correspondence between the archive and investigators. Secondly, information on completed studies will be compiled from available publications and documentation supplied by the researcher. This will form the basic material, for deciding whether or not the data should be acquired. Prerequisites for inclusion of information at this stage is that the data is extant, in machine-readable form, and that the researcher is willing to make the data available to secondary users, perhaps conditionally, at some future date. Complete descriptions of data sets will only be made for studies acquired by the Archives and available from the Archives for secondary users.

Acquisition Plans

Acquisition policy will generally be determined by reference to the Users Advisory Committee which is being established for the Archives. Members of the Committee will be drawn largely from the social science departments of the University which include Demography, Sociology, Political Science, Economics, Economic History, Law, History, Urban Research and Statistics. In addition, at least one representative of ACSPRI will be on the Committee. Materials gathered in the course of compiling the Inventory will be presented to the Committee at regular, probably quarterly, meetings for a decision on the priority to be given to acquiring the data.

Highest priority will be given to acquisition in response to specific requests, which may be for a specified data set or sets, or for data relating to a specific topic. If the data are not already held by the Archive this will clearly involve some delay, but every effort will be made to minimize this. In the longer term, as the holdings of the Archive increase, the frequency of such requests should diminish.

The third basis for data acquisition relies on the attitudes of research funding agencies in Australia towards data archiving. The major funding bodies support a great deal of the primary data collection activity, particularly that of academic researchers, and should be supportive of an activity which will encourage wider use of these resources. Grant applications for additional funds to support the salaries and activities of additional staff will be made, which, if successful, will allow the Archive to develop more quickly. The Australian Research Grants Committee, the major source of academic research funding, agreed three years ago to include in its Advice to Applicants a request that social science data arising from funding projects be deposited with ACSPRI, but this has achieved little to date. Many overseas bodies make the deposit of such data a condition of grant, but this has so far been resisted by the ARGC. The Department of Health has this year provided funding to support the establishment of an archive of survey data on drug use in Australia and this project is underway.

There are I believe major advantages in focusing data acquisition on specific substantive areas where funding is largely centered on a single agency. The problems of locating suitable data can be overcome through reference to the agency's records, and the agency's involvement may act as an inducement to researchers to deposit their data. A substantial collection of related data provides greater opportunity for secondary analysis, and the agency supporting the creation of an archive will surely want to encourage use of the resource which in turn would encourage further support of the archive from the agency.

The Archives' Users Advisory Committee will also decide the level of data cleaning to be carried out on data acquired. On receipt of the data by the Archive, a minimum level of range checking will be done, and where necessary, multi-punch data converted to single-punch. More detailed checking of the data, error corrections, and creation of a codebook

by the Archive will only be undertaken on studies thought to warrant the effort and expense.

On a general point of inter-archival co-operation, it would surely benefit all archives, and new archives in particular, to have information readily available on the types of data set most often requested. The SSRC Survey Archive provided us with a list of their 25 most heavily demanded data sets which they concluded "demonstrates that national and cross-national rather than local surveys, and longitudinal panel and time series rather than one-off surveys, attract the heaviest use." I feel sure we would all like to know whether this is a general conclusion or one which is perhaps a result of the particular holdings of the archive at the time. British Election Studies and Family Expenditure Surveys form a significant part of their list, but does this reflect the substantive topics of interest or the quality of the survey work or some other factor? Many established archives will surely have conducted user surveys and it is important that the result of these surveys be widely available to all archives.

Dissemination Plans

To date, formal advertising of ACSPRI services has been done through distribution of the ACSPRI Newsletter. Editions of the Newsletter are produced in March and September and distributed by the ACSPRI Representative largely within their own member institutions. My intention in establishing the Newsletter was to carry reports of research and teaching applications of secondary data from contributors, but unfortunately no such contributions have been received over the two years of publication.

ICPSR provides ACSPRI with seven copies of codebooks for all Class 1 data sets and these are distributed to codebook centers located around Australia, one to each state. Each ACSPRI Representative receives a copy of the ICPSR Guide to Resources and Services and Information Mailings, and researchers wishing to consult codebooks can borrow them from the nearest codebook center. Of course this places researchers at any but the seven institutions with a codebook collection at some disadvantage, but the cost of establishing more of these centers would be considerable. Seven points of access to the codebooks is nevertheless clearly preferable to only one.

With the establishment of the Social Science Data Archives, the primary task will be to provide information on and access to Australian data as opposed to data from overseas archives, and to broaden the interest in secondary use of this data. As reported above, attempts will be made to extend the network of representatives down to departmental level as opposed to the current institutional level, and to include more institutions in the network.

The principal output from the archive will be derived from the study summaries compiled for the Inventory, since it will contain details

of many more studies than the archive has in its holdings. For studies which have not been acquired, entries will exclude specific details of the principal investigator to avoid the possibility of unsolicited direct approaches. Copies of the Inventory will be distributed free of charge to department representatives and be made available to libraries and individual researchers on a subscription basis. For studies held by the archive, documentation will be distributed to ACSPRI member institutions free of charge, but otherwise sold at cost. The Newsletter will continue as the main publicity medium, being distributed free through the local representatives. Data requests will be charged on a fee-for-service basis.

Summary

There are a number of alternate ways to establish and develop a data archive and we are faced with choosing one of them. Essentially I see a data archive as a consumer-oriented marketing activity with the academic social scientist as the primary consumer, the archivist as the marketing manager and data sets as the primary product. The product is not manufactured by the archive but is picked up second-hand from other sources. The archivist has the job of locating suitable products and deciding which to acquire, and whether or not it is worth cleaning up what is acquired before making it available to the consumer. The problems facing our marketing manager are:

- what data sets to acquire and in what quantities?
- where to acquire the data sets?
- which data sets should be cleaned?
- what promotion activities should be undertaken?

with the object of maximizing the consumer awareness and use of the product subject to the constraints of the limited resources available.

The marketing manager realizes of course the need for information on which to base these decisions and, being the manager, delegates responsibility to his market researcher. She (in this case) carries out a literature search and, since this is a new product on the Australian market, contacts similar marketing operations overseas requesting relevant information. Unfortunately, neither source proves very fruitful.

The marketing manager is thus placed in something of a dilemma, and decides to take a cautious attitude. There seems little point in filling the warehouse with materials which may never be sold - this would simply be doing something for the sake of it. On the other hand, it may be that by filling a warehouse with goods, chosen because they are readily available, and having a good advertising campaign, enough interest could be generated to clear a lot of it even if it was junk for the most part. On balance though, he feels that the consumer market he wants to attract is fairly discerning and that, although they may initially be attracted to the warehouse, their disappointment with the available product will discourage any future interest.

Taking this view, the manager decides that first priority should be given to establishing a good network of contacts among the producers, creating an information source on the availability of goods of interest. The producers themselves are of course interested in the activities of fellow producers and it is felt that their co-operation would be gained by offering them the results of the information collection in exchange for their involvement, in the way that estate agents pool information on houses for sale in multi-list schemes. The producers here are also the most likely consumers and the information system will both assist them in planning any new product and encourage their interest in the products of others.

Acquisition during this initial phase will not be substantial, being concentrated on satisfying customer orders, which are also unlikely to be substantial, and pieces of particular merit selected by a board of expert advisors. These special pieces will be used as the center-piece in promotion activities, and seminars and workshops will be devised around them.

In the longer term, obtaining input to the information system should become less demanding of the archive's staff allowing redeployment of resources to promotion, cleaning, new acquisitions and distribution activities. With what is essentially a new product on the Australian academic market, promotion must be given high priority in order to attract new customers and to keep old customers up to date with new products. Information gained from the network of producers and consumers and orders placed during the initial phase will provide a guide to customer requirements, allowing effective planning of and control over future acquisition and cleaning activities.

LABOR STATISTICS FOR SALE ON TAPE

NTIS, the National Technical Information Service, has available on magnetic tape statistics from the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor. The LABSTAT database includes: 1) manpower information such as labor force characteristics, employment hours and earnings, nationally and by SMSA, unemployment data by SMSA and labor turnover, 2) the Consumer Price Index, Producer Price Index, and Export & Import Price Indexes, and 3) imports statistics, value by industry. Each series is updated monthly and is available as a demand item or by subscription. For pricing and ordering information contact:

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