POSSIBLE OUTPUTS FROM A NATIONAL ARCHAEOLOGICAL DATABASE

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Information is the answer, but what is the question?
(J.D. Halloran in Journal of Information Science 1983, 159)

A former director of the Institute of Archaeology, Professor W.F. Grimes, was one of the first to conceive the need for a comprehensive database for British Archaeology. Writing in 1935 (Grimes 1935) he thought the then projected Institute of Archaeology would be the place to house it. As so often with visionary ideas this one went into limbo, but it re-emerged briefly towards the end of World War II when a conference was held at the Institute of Archaeology, then located in Regent's Park, on the future of British Archaeology. At that conference Sir Cyril Fox pleaded for a National Card Index of archaeological information of all kinds, with a director, clerical assistance, archivist and draughtsperson (Fox 1944). Christopher Hawkes records (1951) that 'the whole room rose and cheered him, in sympathy and joy and hope'.

Alas, the post-War years saw no such development, but 42 years on we are now at last on the road that leads to such a goal. We now have the technology. We have immense quantities of data such as Grimes and Fox could never have dreamed of, although it is stored in many places in many grades of quality. We have in aggregate quite a large number of staff engaged on information gathering and storage. We are gazing at the long-promised land and hoping it will be one flowing with, if not milk and honey, at least printout of the desired type and quality. I hope it is not too obvious to say that the quality of the printout will depend on the calibre of the analysis of the information undertaken before it was put into the system. Anyway, for the purposes of this paper I shall assume that the quality of the human effort will at least match that of the technology, because I am going to suggest some of the different kinds of output that could be produced from a national database for Archaeology. The genesis of this paper was a discussion document which I prepared for a meeting between the Council for British Archaeology and the Royal Commission on Historical Monuments (England) in November 1984. I am indebted to Dr Cleere of the CBA and Dr Fowler of RCHM(E) for permission to present a version of it here. Indeed I am happy to acknowledge Dr Cleere's contribution to Table 1.

I should make it clear that I shall be discussing the potential for research tool, not a management tool. Since the inception of the County Sites and Monuments Records a decade and more ago, the concept of databases for what is sometimes termed cultural research management has been well established. This is a statutory function which, it is obvious to all, is more efficiently managed with computer help. What seems much less obvious to people and indeed is seemingly regarded as an expensive luxury (see discussion in Lavell 1984), is the concept of databases as useful tools for furthering the progress of archaeological research. Surely anyone embarking on a survey or excavation needs information beforehand on the type of site to be examined? Then, during the progress of the work, further information will be required, perhaps almost

	Direct enquiry (on/offline) maps	SDI profiled information	Total record (printout, disc, tape etc)	Retrospective specialist bibliographies	Classified specialist lists (eg index to NMR) in small runs of 25-100	Lists of experts available	Downloading	Work-in-progress catalogue	Key abstracts
Royal Commissions on Ancient/Historical Monuments	X	X	X	X	X	X	X	X	X
DoE/Scottish Devel Dept Ancient Monuments/Welsh Cadw/DoE N Ireland	X	X	X	X	X	X	X	X	X
HBMCE	X	X	X	X	X	X	X	X	X
National museums	X	X	X	?	X	X	X	X	X
Local authorities (county/district/region), SMRs	X					X	X		
Min. of Agriculture, Fisheries & Food	X					X			
Countryside Commission	X	X		X		X			
Forestry Commission	X	X				X			
Nature Conservancy Council	X	X		X		X			
Inst. of Terrestrial Ecology (et al)	X	X		X		X			
Science & Eng. Research Council	X	?	?			X		X	
Road construction units	X					X			
British Gas & other statutory u/takings	X					X			
Archaeological units	X	X		X	X	X	X	X	X
University depts of archaeology	X	X	X	X	X	X	X	X	X
Libraries	X	?	X	X	X	X	?	X	X
Specialist groups, eg moated sites group	X	?		X	X	X	?	?	?
CBA groups & local societies	X	?		X	X	X			
Professional institutions (RIBA, RICS, IFA, etc)	X	?		X		X			
House agents, conveyancers, conservation architects	X								
Individual enquirers (general public)	X	X		X	X	X		X	
School groups on projects	X								
Other users via database hosts (DIALOG etc)	X								

NOTE: This table is meant only as a general guide: each individual cross will need confirmation by market research. The table is based on conversations with three SMR officers, a number of practising archaeologists, and general knowledge of the archaeological scene together with projections from information use in other disciplines.

Table 1: Types and requirements of potential users of the proposed National Archaeological Database.

instantly, to guide the day-to-day progress of the project. Finally, on completion of the fieldwork, still more information is needed to set the newly-acquired, and quite possibly unexpected, data into a local, regional, national or indeed European context. Clearly the separation of pure from applied research is always going to be somewhat artificial, even though the staff of the English Heritage and of the Royal Commission are precluded from becoming involved in research per se. Hence, although I fully understand that most databases have been set up for management purposes, I am arguing that to define and maintain them too narrowly can only hinder the proper understanding of our sites and monuments. Every new piece of research should be set into the full context of what has been done and published already.

Simon Grant and David Evans (this volume) detail the content of and plan for the computerised database of the National Monument Record (see also Aberg 1984). I shall, therefore, merely comment that a wide and so far rather disparate range of information is being included. The database is intended mainly as an index to information available but will be acquiring free text descriptions and bibliographical references, the latter expanded from their present telegraphic form. Much of the record is based on the old Ordnance Survey Archaeology Division cards and it will not surprise those who have had occasion to use such cards for their own research to learn that the proportion of dubious information in the system is relatively high. For some areas of the United Kingdom the frequency of suspect record cards reaches 40%. Theoretically of course the national record could be networked to the County Sites and Monuments Records. Some counties have actively sifted and enriched the old OS records for their area to the extent that they claim to have a much more accurate record for their county than the NMR holds. Since it is NMR policy to transfer no information to the OS until it has been validated by the NMR, it may be that county SMRs need to be reassured that if they pass such enriched material to the NMR it will be available to enquirers even if it has to be held in some kind of suspense account until approved for transmission to the OS. A pilot scheme is in progress to determine procedures for acceptance (Aberg personal communication).

Who are the expected users of such a database? Perhaps surprisingly our views about the users and their needs can only be somewhat subjective at this stage. No one has yet conducted a full-scale enquiry, although the Fircroft seminar on archaeological information retrieval (British Library 1977) made a clear call for this research to be done. The required funds were not forthcoming. The CBA now has, 9 years later, an excellent professionally prepared research design, but once again is baulked for lack of the money, about £ 20,000, to implent it. It is somewhat ironic to note that in 1984 the nation spent something like £ 10m on excavating archaeological data, but seems to have difficulty finding 1/500th of that sum to find out what tabs we need to keep on the data after excavation.

Meanwhile, Table 1 lists the potential users of a national archaeological database. Until we have some quantitative leads from David Evan's research (Evans this volume) we can only make assumptions about potential users. In the meantime it appears that 90% of the enquiries received at present are either topographical, for example all the sites in a given parish or district; period-based, for example all Anglo-Saxon material in Bedfordshire; or typological, for example all castles in East Anglia. I obtained a similar result when I polled a grab-sample of archaeologists at a recent conference. Although I also discovered that most people expected to do their research by telephoning a known authority on the subject! Presumably they hope that the said authority had done their research properly. . .

It has to be remembered, of course, that enquiries to a national record could be expected to increase in sophistication and complexity once the potential of the record and its quality were recognised. One could find out for example, which East Anglian barrows had never been excavated. Or one could ask for a list of all excavations, published and unpublished, by Professor X. Of course it would be highly desirable to be able to ask for all occurrences of Type XYZ brooches on third century settlement sites or in early sixth century graves, although it seems it will be well into the twentyfirst century before the record is likely to reach that level of detail. Incidentally, advances to archaeological knowledge, especially those resulting in revised classification of sites, will of course need to be reflected in continual updating of the record.

Assuming a reasonably comprehensive, if shallow, national record, it is possible to envisage numerous ways in which parts of the record could be made available. These include:

> straightforward answering of enquiries from staff in all parts of Fortress House, from academics, government agencies, statutory undertakings and the general public
>
> supply of Selective Dissemination of Information (SDI): that is, all information corresponding to the interests registered by subscribing individuals is automatically sent to them at stated intervals. Institutions could also register their profiles for such a service
>
> supply of non-selective printout, magnetic tape or disc to institutions at regular intervals
>
> production and dissemination of specialist retrospective bibliographies
>
> production of indices to various parts of the database
>
> lists of work-in-progress inside and outside contributing institutions etc
>
> downloading of various parts of the record to satellite systems
>
> key abstracts: that is, a current-awareness service of important recent publications

These possibilities can be elaborated further:

> Direct enquiries: answered on-line if the enquirer has suitable equipment, otherwise by post.

> SDI: individuals or institutions could subscribe to a service offering regular packets of information fitting the subscriber's profile. Such profiles are normally drawn up in terms of keywords selected in collaboration between user and provider and are usually subject to regular amendment as the user's interests change or as understanding of the content and structure of the database increases. SDI is a highly complex operation in terms of skilled personnel, software and distribution. It is also expensive for the subscriber unless heavily subsidised. For example, the Royal Society of Chemistry charges £ 40pa for quite a limited profile while INSPEC charges £ 165pa. Nonetheless it can be a substantial help to the researcher. The suggestion has been made that instead of using the fine screen of most SDI services, it might be more economical to offer a coarse screen service for Archaeology. For instance one would be informed on all Roman material published in the last 3 months or all secular housing references. The idea would need close study to see whether in fact it was more

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economical. Subscribers might prefer the fine screen approach to save them wading pages of unwanted material. However, whether fine or coarse screened, the SDI service demands above all extremely tight thesaurus control. The NMR plans for this are anxiously awaited.

Total record: this would involve the supply of regular monthly, quarterly or yearly packets of information representing the current output of publications or input of survey information or both. It could be supplied on subscription as printout or in magnetic form. It could be thought of as current awareness for institutions.

Retrospective bibliographies: these could be compiled as a speculative venture for popular subjects or to special order for partiular individuals or institutions. The potential would be only slight in the early years of the database until sufficient information had been garnered. However, the conversion to machine-readable form of the Archaeological Bibliography compiled by the CBA for the last 40 years would enormously increase the usefulness of the proposed database. It would surely be worth investigating the possibility of funding an optical character reading (OCR) project to this end. This would inevitably entail the accessing of non-topographical or research material in addition to the topographical material. This might present problems.

Indices to the record: these would be bare indications of what was in the separate streams of the database. They could be given away as publicity material.

Work-in-progress lists: these would assist researchers to avoid duplicating the work of others. Collaboration with other list compilers such as Research in British Universities, Polytechnics and Colleges (RBUPL), available from the British Library Lending Division at Boston Spa, which already collects research information, might be possible.

Lists of experts could be formed as a sub-set of the work-in-progress lists. The need for this is clear from the enquiries received at the CBA.

Down-loading: this involves selection of certain classes of material from the main database and passing it over a telephone line or computer network to approved subscribing institutions which can then resort the material for their own use. County SMRs might be expected to be the principal users of such a service.

Up-loading: is the sending of information from periphery to centre and should also be allowed for.

Key abstracts: these would represent the most important new published work and could be circulated by means of a simplified SDI method on subscription. The NMR would find no difficulty in absorbing these abstracts if they were restricted to topographical articles which make up no more than 60% of the total at present found in the CBA's information service. Theoretical or synthetic articles make up the remaining 40%. Though often of vital

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Scanning list maintenance

Thesaurus maintenance

Published, archival, card-indexed information; theses; lists of persons available for specialist reports; 'work-in-progress' in units, institutes & universities

Concise 'hard' data ex-archive: finds, statistics, environmental information

Acquisitions, abstracting, indexing, classifying, quality control

County SMR and other information (uploaded)

NATIONAL ARCHAEOLOGICAL DATA BANK (computer records giving brief summaries, abstracts, lists, with keywords and other retrieval tags)

Data bank maintenance (logging, backups, general housekeeping)

Typesetting

Selection for various services

Tape/disc generation & copying

Printed services

Online and magnetic copy services; downloading

Special bibliographies

'Key abstracts' (all subjects)

SDI

Publicity

Online market

Tape/disc market

Special SDI

Standardised topic SDI

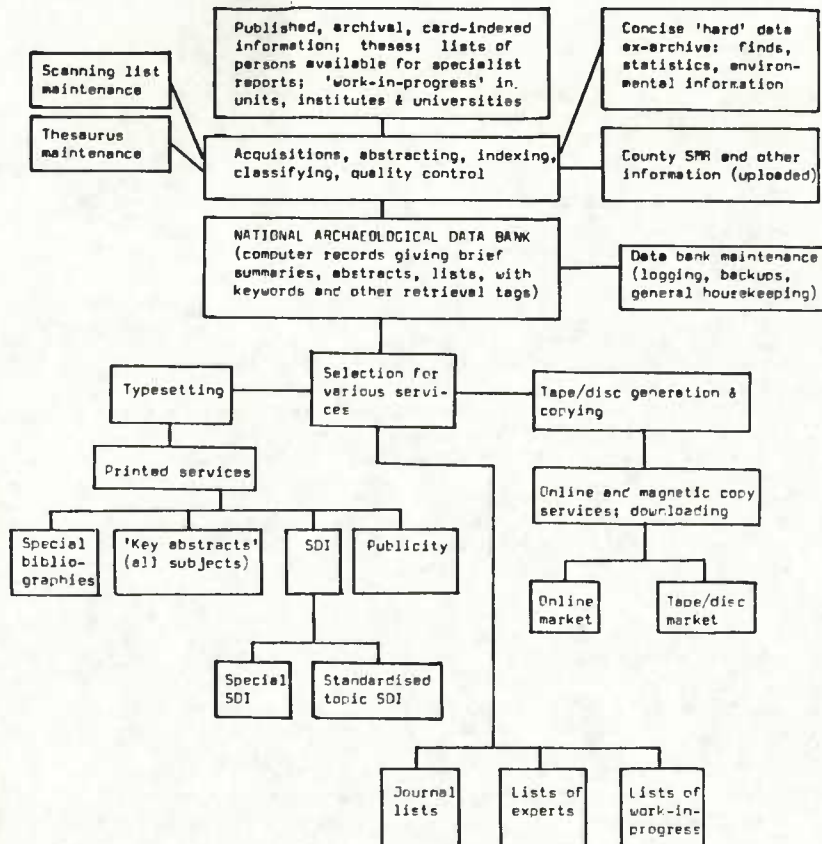Journal lists

Lists of experts

Lists of work-in-progress

Figure 1: Flow chart of the suggested structure for a National Archaeological Database.

importance, these remain an intractable problem for the NMR. There are problems of integrating bibliography, where the unit of information is the book or article, with a Sites and Monuments Record approach, where the unit of information is the site however that is defined (see discussion in Bond 1984).

It should perhaps be emphasised that all these services represent a quite substantial potential income for the NMR. Archaeologists, or at least some of them, are beginning to realise, along with the rest of the scientific community that information has to be paid for. As long as a pricing policy is sensitively and carefully developed the mass of information now being stored by the NMR could be exploited to defray at least some of the immense costs of its acquisition. In the absence of full market research, first indications are that direct enquiry would be the most used feature of the service. Lists of experts whould probably come second, followed by SDI, retrospective specialist bibliographies, classified lists and work-in-progress lists as equal third.

Figure 1 gives a suggested flow-chart for the database, at all stages from collection of material to Lasercomp or similar printed output.

I have had to leave the Scottish and Welsh Royal Commissions on Ancient/Historical Monuments out of this account because it is still a matter of discussion how they will mesh into the English system. Archaeologically speaking they are of course vital to the success of the whole scheme. Ireland too needs to be included since the prehistory and history of all the islands on the northwestern continental shelf of Europe are a unity. There remains a great deal to do before we can get the printout flowing in the way we would all like.

References

ABERG, A. 1984 The archaeological records section, NMR. Annual Review of the Royal Commission on Historical Monuments (England) 1983-4: 16-17.

BOND, J. 1984 The Oxfordshire Sites and Monuments Recod: a progress report. Museum Documentation Association Information 8(4): 112-8.

BRITISH LIBRARY 1977 Problems of information handling in Archaeology: report of a seminar. British Library Research Development Report 5329, H.M.S.O., London.

FOX, C. 1944 Records and discovery - local and national. University of London Institute of Archaeology Occasional Paper 5: 51-3.

GRIMES, W.F. 1935 Recent books on British Archaeology. Antiquity 9: 424-434.

HAWKES, C.F.C. 1951 British prehistory halfway through the century. Proceedings of the Prehistoric Society 17: 1-15.

LAVELL, C. 1984 Why dont you want to know? Information and the archaeologist. Scottish Archaeological Review 3(1): 2-7.

RCHM(E) 1975 Report of the working party on archaeological records. Royal Commission on Historical Monuments (England), H.M.S.O., London.