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Archives of the Future

1 Traditional perspective of archives

The conception of what archives are and constitute has changed throughout the centuries. This conception differs also between countries. The purpose of archives/records administration, similarly, has changed through the centuries. To begin with, the state authority regarded archives and archival administration mainly from a constitutional and legal perspective, as a safeguard for rights of property and ownership and as evidence of diplomatic and other proceedings. With archives thus viewed, it was only natural that access to them should be restricted.

Archives at this time consisted of clay tablets, papyri, parchment and, later, of paper documents. The mass of documents was unimpressive, and they could be mastered with relatively little difficulty. By the same token, inventorying, authenticity, search tools, appraisal etc. did not seem to pose problems.

This, more or less, was the situation prevailing from the medieval era until the eighteenth and nineteenth centuries all over Europe. But in the nineteenth century things began to change. As administrations grew and the production of documents increased, special bureaucratic traditions developed. In the twentieth century, we saw real mass production of documents in the archives, especially during the two world wars. One dominant factor, of course, was the swelling of administration as a result of public sector expansion. The dominant medium of information was still paper, even though other media such as microfilm were beginning to be used. In most countries, even in democracies, access to documents in the archives was restricted.

After the Second World War, the situation changed. In many countries, the developed ones especially, the appearance of societies dominated, to a greater or lesser extent, by social engineering generated huge quantities of information and archives expanded accordingly. Electronic documentation entered the public service in the sixties and seventies, the idea being that a better and more advanced society could be created through greater production of information made more accessible.

One reaction against the collection of vast masses of personal data and social engineering took shape in the sixties and seventies, resulting in various kinds of data protection legislation all over Europe and also in many international conventions, recommendations etc. on the subject of privacy. Archival affairs were greatly affected by one aspect of this new trend, namely the deletion of personal data after its having been used for its primary purpose.

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2 The four factors of decisive importance for archival work

2.1 Technological development

The technological development means that we have to deal with enormous masses of data. It is easy to talk of megabytes, gigabytes, terabytes, petabytes and even exabytes. But in more palpable terms, the National Archives of Sweden, for example, have taken delivery of some 2 terabytes of electronic records, containing 20,000 files and stored on about 10,000 data carriers, usually tape cassettes, corresponding in hard copy terms to 100,000 shelf-metres. Printing out on paper eliminates the possibility of automatic processing, whereas large volumes of data can now be transmitted from one place to another all over the world.

One important factor is that ICT development has resulted in the development of new areas in science and medicine, for example, which only a decade ago would not have been possible. New hardware and software is developing rapidly. The archives of the CERN laboratory in Switzerland contain hundreds of terabytes of data. In 1999 the pharmaceutical company Smith Kline Beecham were archiving 2 terabytes a year, and 2 gigabytes of regulatory documents are added daily: growth is on a logarithmic scale. This company will soon reach 1,000 terabytes.

This development will raise problems as to what documents are, how to store them, how to migrate them (i.e. to change their technical format without compromising neither contents nor context), and problems of authenticity. The difference compared to the paper world is that in this ICT world you cannot wait: you have to plan and act even before the information is created.

2.2 The democratic process

Today, and perhaps in Europe especially, we are faced with a new situation. It can be argued that we have a new society, one in which people have become more educated and critical. They have become independent and are taking a growing interest in the way society is administered. This, coupled with the rapid development of ICT and within the European Union, is making citizens much more interested in matters regarding democracy and access to documents, which is seen as a right and not as a privilege (see about Article 255 in the Amsterdam Treaty below). The growth of historical interest can furthermore be linked to these issues, as the societal function of historians is to describe and explain the past, both the more distant but, not least, the recent past.

The situation up to the end of the last century was that the degree of openness and the extent to which documents kept by Governments, agencies and archival institutions were legally available to the public varied a great deal, depending on differences in national traditions, rooted as they were in historical experience and inherited concepts of right and justice. Access to documents is in many countries today seen as a democratic right and as the best way to inspire confidence in the public administration. Arguably, this also enhances legitimacy.

2.3 Internationalisation

As we have already seen, attitudes and legal positions regarding access and protection of privacy varied from one country to another. Not so today. The most important factor in

Europe is the European Union. Much legislation is harmonised through its directives etc. Perhaps the best-known directive is the so-called Data Protection Directive from 1995 (95/46/EC), which should have been implemented in 1998. This directive is meant to facilitate transfer of personal data between EU countries and so-called third countries, which have the same level of protection as set within the EU. Another important directive is that on certain aspects of copyright and related rights in the Information Society (2001/29/EC), which has implications regarding the preservation and availability of information.
Then there is Article 255 of the Amsterdam treaty of the European Union, laying down that the citizens of the Union shall have a right of access to documents in the EU institutions. Regulations regarding this right have been elaborated and were adopted in May 2001. In the Green Paper on Public Sector Information: A key resource for Europe, it is said that public sector information plays a fundamental role in the proper functioning of the internal market. In this paper a comparison is made with the United States, where – ever since the Freedom of Information Act (which went into effect in 1967) – the federal administration has pursued a very active policy of both access to and commercial exploitation of public sector information.

2.4 Changing structures in society

Formerly, we lived in a more stable society whose institutions and structures seldom changed. Today, we are living in a rapidly changing society. Old structures are giving way quickly. The privatisation of public functions has become more frequent all over the world. Furthermore, the role of the nation-state is questioned and new types of transborder structures are emerging. This tendency of rapid changes and supranational structures will most likely accelerate in the future. It has affected archival work in many respects and to a considerable extent. Not least, there are changes in mentality in that public authorities are becoming more open to the public. In Sweden the ongoing development of so-called ‘24-hour agencies’ can be seen as an example.

3 Some elements of archival work

3.1 The concept of a document/archive

It used to be easy to determine what a document was. It was usually a paper with information, which was stable and difficult to manipulate. It had been either received or drawn up by an agency or private body, i.e. an archive creator. The agency or body was also easy to distinguish and the routines were relatively stable.

Today a different situation applies. In the electronic world of large databases, it is not so easy to determine what is a document and which agency/body is the archive creator or is responsible for the information. The Regulation of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents gives the following definition:

> – “document” shall mean any content whatever its medium (written on paper or stored in electronic form or as a sound, visual or audiovisual recording) concerning a matter relating to the policies, activities and decisions falling within the institution’s sphere of responsibility.

This definition may be clear concerning the more stable and fixed paper documents. But regarding electronic information it is not enough. In Swedish legal doctrine, another type of document has emerged since the 1970s, namely so-called potential documents, which can be said to exist only on demand and do not exist in advance. They constitute official documents and are thus available to the public. Now a new Government bill has proposed that better predictability should be established – that is, that there should be existing and finished documents in the electronic environment. This proposal cannot resolve all difficulties, and more work will have to be done to elaborate more detailed rules. As we see it now, this puts more emphasis on the registration, the establishment of metadata etc. at the records creation phase, where it must be decided even in databases what constitutes existing and established documents which are accessible to the public. It should be mentioned that in Sweden archives consist of official documents, which means that the archival authorities have to deal with older records as well as documents of today. Definitions of what a document is and what an archive consists of vary but it is necessary for each country to choose and apply *one* clear definition of these phenomena in the electronic era.

I believe this to be the only solution. Otherwise, it may be impossible five or ten years after an event to decide what kind of combinations of data were accessible to the creator of the archive and therefore constitute official documents in an electronic environment.

3.2 Arrangement and description

When it has been established what constitutes a document, this document must be registered or catalogued so that the information will be available both to the agency itself and to the public, and also in the long run for research and evaluation. How this is done differs from one country to another all over the world. In countries with a tradition of freedom of information, registration and cataloguing of documents have a stronger position. This is clearly shown by developments within the European Union and the Council of Europe.

If registration and cataloguing in the paper world could be done without too many difficulties, the situation in the electronic world is quite different, owing of course to the four factors mentioned above, in subsection 2.

3.3 Appraisal/deletion

Appraisal, which means the evaluation process of what documents to destroy and what to save for perpetuity, and deletion, which is the destruction of documents, are rapidly becoming one of the toughest tasks of archival work. Obviously, we can't keep everything, even though the price of data carriers is steadily falling. The difficulty of this task is compounded by the factor of privacy, which has become so manifest in recent decades. Take, for example, the EC directive on the protection of individuals with regard to the processing of personal data and on the free movement of such data, where the main principle is to destroy personal data after they have been used for their primary purpose. If this were to be fully realised, the result would be disastrous for free access and research possibilities. A balance must be struck between the conflicting interests.

In Sweden, the National Archives has defined deletion as follows:

- deletion of official documents,
- deletion of data in connection with transferring information to other data carriers, if this means

- loss of information,
- loss of possibilities to combine data,
- loss of possibilities to recognise or find data,
- loss of possibilities to establish the authenticity of the information.

A clear definition of deletion of this kind is necessary in the computerised society. Moreover, I believe that the definition should be set down in law.

The need to keep data is also growing rapidly in a world where human beings can influence the climate so very much and where so much can be done in the medical field.

It also has to be remembered that these electronic documents form part of our cultural heritage. UNESCO, in its Memory of the world programme, realised this need and has initiated several projects for preserving our digital heritage.

3.4 Authenticity/migration

Matters of authenticity are creating quite new problems regarding electronic documents as compared to paper documents. In many cases today, you have no paper documents, only electronic ones. In addition, the transborder data flow both in the public and in the private sector has made it necessary for norms of authenticity and legal validity to be agreed at the international level. Then again, the fact – that in many countries electronic documents are now being transferred to archival institutions much earlier than the paper documents were – means that these institutions have to guarantee validity and authenticity of the electronic documents in the long run through migration etc.

4 Future

It has to be recognised that archives are created and kept for certain purposes. Initially, they served the interests of king and government. Today, the more democratic interests prevail, i.e. public access. Furthermore, documents of extreme importance, for example regarding the environment or regarding the individual (such as patient files), will in the near future exist only in electronic format, which generally means that they must be kept in this way. The archival/records administration must adapt accordingly.

Furthermore, the principles of archive maintenance prevailing until now, i.e. the principle of provenance, can be questioned but apparently still holds good. According to the Swedish interpretation, this means that both text (information) and context (the original structure, in which the text was created) must be preserved. This has become even more important in the electronic environment. This interpretation has been acknowledged in many research projects all over the world. Very simply, it is a matter of order and discipline in the archives/records administration throughout the lifecycle of the document.

It must also be stressed that electronic documents form part of our cultural heritage. It is generally easier to conceive of clay tablets or parchments letters as a part of that heritage, but it should likewise be evident that electronic documents have fundamentally the same purpose as paper ones, namely that of storing text on a data carrier in a certain context. The problem is that we now have, and will continue to accumulate much more data, and data of enormous complexity. This linked with the fact that electronic documents are much more fragile and transient by nature, makes the future very exciting. Looking centuries or millennia ahead and trying to foresee what kind archival of information we will have access to, one is

easily bewildered. It is almost like science fiction, on the lines of Asimov's Foundation books describing the knowledge-based planet Terminus, where all data from the Universe are going to be kept, so that civilisation can survive the fall of the empire.