Acquisition and use of electronic records in the National Archives of Sweden

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This paper generally reflects the experiences made at the National Archives of Sweden concerning the management of electronic records and describes how we try to solve the new archival problems that have been caused by these media. I will stress what seems to be special for the Swedish development and possible reasons for that.

Before describing the situation in Sweden I will present some figures about the general situation concerning electronic records at national archives in the world. Since the archival congress in September 1992 I have been trying to gather information about this matter, mainly by distributing a questionnaire. The table below probably contains most of the countries where national archives have received electronic records. The questions might have been interpreted in different ways so the numbers specified shall not be looked upon as exact[2].

As seen above the National Archives of Sweden has of today received more than 10 000 magnetic tapes containing electronic records. That would be about 1 Terabyte of information totally (1600 and 6250 bpi). This means that although Sweden is a small country the amount of electronic records delivered to the National Archives is amongst the highest in the world.

What might then be the explanation of the amount of delivered electronic records in Sweden? Two main reasons are to be seen, the relatively early and high degree of computorisation among Swedish governmental agencies and the existence of the Swedish Data Protection Act. This is also related to an old and maybe quite unique Swedish tradition of keeping a lot of information about the citizens as governmental personal records.

Swedish governmental agencies expanded especially during the 60s which among other things led to an early introduction of computer systems. Many agencies introduced large administrative systems. With large amounts of the governmental information made machine readable the National Archives became involved in making disposal decisions concerning some of these systems already during the 70s. This was natural as this information in its traditional form on paper constituted basic series of archival records, frequently used by researchers.

The other reason was the Data Protection Act. It was promulgated in 1973 to secure the personal integrity in computer systems, governmental or private. The Act specifies that all computer systems containing personal

Table 1. Electronic records at national archives

	Number of received		Use (annual frequence)	
	tapes/cassettes	files/datasets	datamedia	paper(occasions/pieces)
Canada	9 000	12 000		
USA	2 520	11 646	371	360
Sweden	10 100		40/1300	25/25
Danmark	1 200	985	2	
Norway	265		5/10	1/many
Finland	289			
Germany	1 092			
France	2 500	3 500		
Switzerland	304	527		
Italy	(is said to have)			
U K	(plans to have 1995)			
Netherlands	(is having a project on the matter)			

information of a certain degree of sensitivity, must be permitted by the Data Inspection Board, and have a limited time to exist. This fact originally prevented the National Archives from receiving these electronic records, since the Data Protection Act didn't support giving permits for archival reasons. But with the change of the Act 1982, the Data Inspection Board could decide that the electronic records from these systems were to be delivered to the National Archives instead of being destroyed. No permission was needed for the National Archives. Disposal decision were also to be made after consultations with the National Archives. Still it meant that the disposal concerning a big part of the governmental information wasn't decided by the National Archives. However, normally the view of the National Archives is accepted by the Data Inspection Board. Altogether this has led to a high amount of transfers to the National Archives. When a system is ended or parts of the information is getting to old to be stored in the system a decision has to be made. The information must be destroyed or transferred to the National Archives.

Transfers of electronic records had actually started already during the 70s. At that time the records mainly came from different governmental committees which had finished their activities, having all their archival records transferred. After the above mentioned change of the Data Protection Act the transfers increased. The records mainly came from large govermental administrative systems like systems for unemployment, insurance, governmental accounting or applying for university studies. The largest part of the information has come, and still comes, from the systems for taxation where tapes are delivered annually from 25 regional agencies. There is also a certain amount of transfers from research projects, the universities being a part of the governmental sector in Sweden. A transfer to the National Archives offers a possibility for the researcher to have the electronic records preserved with the personal identification even when a study is finished. If there is a need for a follow-up in the future the records may be requested from the National Archives on the condition that a new permit from the Data Inspection Board is given.

Another main part of the transfers, the foremost being from the taxation systems, is the records from Statistics Sweden. Statistics Sweden has of course a large amount of computer systems with personal information. This is regulated by the Data Protection Act. After long discussions between Statistics Sweden and the Data Inspection Board also involving the National Archives, the Swedish Government decided that a large part of the these records that had reached a certain age were to be transferred to the National Archives. This was done in 1989. At the same time the National Archives received extra economical resources for this matter. The transfer was partly made voluntary by Statistics Sweden to avoid the costs caused by clause 10 in the Data Protection Act. (That clause enables every person having their personal data registered in a computer system to have an outprint of all that information once a year. But the electronic records transferred to the National Archives are excluded from this plight.) The transferred records are still frequently used by Statistic Sweden as I will mention later.

For a long time there was no special staff for the electronic records at the National Archives. But following increased funding a section dealing with modern media was created in the beginning of the 80s. Today there is an EDP-section as a part of the division for technical matters. This division also includes micrography, conservation and book binding. The EDP-section deals with the internal EDP use and with the development of archival applications like computerised inventories apart from managing transferred electronic records.

For many years there was no computor equipment at the National Archives. All use and copying had to be done through service bureaus. Some years ago we bought a UNIX-computer. But we have had problems finding suitable software for our needs. Today we are examining the possibility to use a DOS-system with special software and different tape-drives, to be able to convert both different physical and logical formats. (The influense of finding such a solution came from visits to the National Archives in USA and Canada last autumn.) Our tapes are stored in a climate archive. They are rotated, rewinded and then copied after 10 years. All tapes are transferred and stored in 2 copies, one being kept in an archives far north of Stockholm.

When electronic records are transferred the National Archives sets certain requirements. This is possible on the basis of the Swedish Archives Act which gives the National Archives the right to regulate the management of electronic records considered governmental archival records. The requirements are mainly specified in accordance with different standards. The aim is to get the electronic records in a form as undependent of original hardware and software as possible. We accept ASCII and EBCDIC but the numerical information may not be in any packed format.The files shall be in fixed format and may only contain one record-type. The idea is to have a structure corresponding to and also directly importable to a relational database. This means for example that variable files from a system with a hierarchical structure have to be converted before transfer. We have old transfers with files not satisfying matching our requirements. These files will be converted when we make a new generation of storage copies. (It could mean that a variable file containing 5 record-types would be converted to 5 fixed files.) The transferred tapes shall

contain files labelled with ISO or IBM labels. Today we only accept 9-channal spool tapes, 1600 or 6250 bpi. But in the near future we plan to accept other physical formats. Probably we will choose two types for internal longtime storage, for example 3480 and DAT. We will possibly also accept other types of data-media for transfer and convert them as long as our software can handle them and we can charge an extra conversion fee.

There are also certain regulations about the form of the documentation of the electronic record. Generally the documentation is kept on paper. But we would like getting code tables machine-readable, like an extra table in a relational database. To make it easier to import the files to a relational database system, we wouldn't mind getting the record descriptions machine readable. In the future we probably also would like to get the descriptions of how to create a certain archival record from a number of storage files/tables expressed as standardised SQL-commands. It is important to have in mind that the National Archives is collecting public records in machine readable form, which may come from complex administrative systems. The actual record does not have to be similar to what is one data file.

The National Archives also takes part in differents fields of the standardisation work.

Primarily, in the standardisation of archival techniques such as terminology, paper, book-binding and storage conditions. But because of our work with electronic records we also take part in the standardisation work on IT, linked with ISO/IEC JTC 1. This has been a good way of getting information in this field. But because of lack of time and technical knowledge the possibilities to contribute to the work and influence the standardisation work has been less then we would have wished.

Finally I would like to mention a little about the use of the electronic records transferred to the National Archives. The basis for this is the Freedom of Information Act which is one of the fundamental laws (constitutions) of Sweden. It stipulates that all governmental information is open to the public, with the restrictions specified in the Act on Security (Privacy Act). This also includes electronic records. However the use of these in the National Archives has been low until the transfers from Statistics Sweden were made. The reason is probably that the users do not know about, lack the technical knowledge or are not interested in modern records.

Today the main user is Statistics Sweden having need of their former records, and doing it so much that there is a transport from the National Archives twice a week. But the use from others, mostly research institutions, also has increased in recent years. The researchers using the electronic records are mostly in the field of medicine and may also ask for some material originally from Statistics Sweden. All this is done in machine-readable form. It will therefore require a permit from the Data Inspection Board if the records shall contain personal information. 99% of the electronic records transferred to the National Archives contains personal information. However it would be possible to get some special records without a permit if the personal information was excluded. There is an example of SSD having received electronic records from the National Archives in that way.

Up to May 1993 it was very rare that someone wanted information as an out-print. But that month we got the national register of private boats as a transfer. The responsible governmental agency had to end it after a political decision. Just now we receive about 25 questions a week concerning these records. Mostly it has been the police, the navy or the public asking about the owners of lost boats. The information are distributed by mail, fax or telephone.

Today we have no possibilies for the public and the researchers to do on-line work with the electronic records. But we plan to have it in the future. There is actually a co-operation between the EDP-divisions/ sections of the National Archives in the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden). That has resulted in a common project called TEAM (Availibility of Electronic Archival Material). Within the project the Norwegians are constructing a relational data base system to import data from the storage files and then using some suitable software to present the data. Through this system we hope that in the future the public will be able to get direct access to and print-outs from our electronic records, naturally under the restrictions that are set by the Act on Secrecy and the Data Protection Act.

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2 The figures are taken from a questionnaire answered from September 1992 to May 1993. The numbers describe the total holdings and the annual use and form of distribution of electronic records to researchers and the public