

# Management of the Electronic Archives for Optimizing Services at Banten Jaya University

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**Abstract**—Archiving is a form of activity that starts from the creation, receipt, collection, regulation, control, maintenance and care and preparation of records according to a particular system. Before the existence and development of information technology, a filing system with its respective methods each agency and or company filed in order to document the records for the operational needs of its business processes. Many obstacles are encountered in the context of managing records physically or conventionally starting the process of searching, retrieving, borrowing, and returning or storing an archive that is not in accordance with procedures. Besides this the implementation of the classification of archives is also not in accordance with existing procedures. So that the phenomenon of archival management that has not been maximized at Banten Jaya University needs to find a solution. This research will try digital archive management in all sections or work units at Banten Jaya University so that the Business Process in all parts in providing services to stakeholders will be optimized. The main objective in this research is the aspect of controlling the circulation of records that will be easier to control, because the current archive can be in the form of text, sound, images, maps, designs, photographs, electronic data interchange (EDI), electronic mail (e-mail) and others.

**Keywords:** *archive, filing, service*

## I. INTRODUCTION

Archive is a recording of events or activities in the form that can currently be with the media in accordance with the needs of the organization in running its business. With the development of data technology, it can be stored on paper or Disc media, so that its form can be in the form of text, audio and video, so that in its management it takes a variety of resources and methods in order to create, collect, manage, control, maintain and maintain an archive, so that it will be available properly when the file is needed.

Banten Jaya University, currently in the management of archives is still using conventional methods both storage and control, so there are various problems that arise related to storage and placement back when an archive is needed or borrowed by other work units with or without clear rules in the process return, so when it takes a certain archive often occurs archive is not in place and it is not clear the work unit that is borrowing. In addition to some of the problems mentioned above, the costs required to maintain Archive physically require a much higher cost, both the availability of space, employees to manage and other matters.

Electronic archives according to the International Council of Archives (ICA), namely: "Electronic records are a record that is suitable for manipulation, transmission or processing

by a digital computer" (electronic records are records that can be manipulated, transmitted, or processed using a digital computer). With the development of technology both hardware and computer software at this time, to make converting an archive into a digital archive becomes very easy, but in the framework of digital archive management in order to guarantee its authenticity, easily accessed, and guaranteed security, it must be planned properly to manage the archive digital hardware, software and the right methods.

To manage this electronic archive begins with involving the asiparis or the person in charge of the physical archive in order to find boundaries about the similarity so that the principles of electronic records do not conflict with the principles of conventional archival storage.

## II. METHODS

### A. Research design

In this research design, it is outlined in terms of data and information cycles, processes and system actors who will interact in managing electronic records or digital archives. From the plan or plan, it will be seen clearly the activities of the system actors in managing the archives and accessing the archives in accordance with their respective user levels.

### B. Research Objects

The object of this research is the management of records both static and dynamic archives at Banten Jaya University, which on a certain scale are still used by several work units in running their business processes;

### C. Data collection

In this research the data collection is as detailed as possible or with field research techniques. Data collection is carried out in a detailed and systematic manner so that the results of data collection can be used as material for further analysis, stages in data collection include observations, interviews and documentation related to procedures to find out the archiving methods carried out conventionally.

### D. Data analysis method

The results of interviews conducted with resource persons are summarized and analyzed into information that can be interpreted and understood from the business process to analysis in data management. This research uses descriptive methods to find and arrange in an appropriate and sufficient manner from all object activities, process and human;

### *E. Data Analysis Technique*

In this research, data collected from interviews and documentation studies will be analyzed qualitatively and described in a descriptive form. Broadly speaking, data processing is carried out as follows:

#### *1) Reduction*

Namely the selection process, by focusing on the object and transformation of rough data that arises from written records in the field by summarizing. Select the main points and focus on dynamic archive processing in the administration section.

#### *2) Presentation of Data*

Data is presented in the form of narrative text by grouping according to each sub.

#### *3) Drawing Conclusions*

After describing the various data that has been obtained, the authors make conclusions that are the results of the research design.

## III. RESULTS AND DISCUSSION

### *A. Electronic Records*

Basically, electronic records (electronic records) are records created or stored in electronic form, either analog or digital. Electronic archives according to NARA (National Archives and Record Administration) are archives that are stored and processed in a format where only computer machines can process them.

Therefore electronic records are often said to be machine readable records (records that can only be read through a machine). Electronic records are information contained in electronic files and media, which are created, received or managed by organizations or individuals and store them as proof of activities.

ARMA Standards Program: Glossary of Records Management Terms, 1984, defines electronic records as "Machine-Readable Records: Coded information which must be translated by a computer", (Machine-readable archives: Information in the form of codes that to understand must be translated first by computer). According to Read & Ginn states that "electronic records may contain quantitative data, text, images, or sounds that originate as an electronic signal". The meaning is that electronic files can contain quantitative data, text, images, or sounds that originate from electronic signals.

The Standards of Electronic Records Filing and Management of China defines electronic records as documents created by digital devices, in the digital and digital format, relying on digital devices such as computers for reading and processing, and can be distributed through communication networks. Meanwhile, according to Australia archives in the book managing electronic records, electronic archives are records that are created and maintained as evidence of transactions, activities and functions of institutions or individuals that are transferred and processed within and between computer systems. A similar opinion was conveyed by Wallace who said the electronic archive consisted of a collection of information recorded in the form of code that could be read and stored on several media so that it could be recovered, read and used.

From some of the above understanding, it can be

concluded that electronic archives can be in the form of electronic files or electronic documents. Electronic archives can be interpreted as a collection of information that is recorded and processed using computer technology as an electronic document so that it can be seen and reused. Electronic archives can also be interpreted as all kinds of documents created using electronic media (eg computers) and stored in the form of digital files. Original files that have been transferred provided by means of photos or scans and then stored in the form of digital files can also be referred to as electronic archives. Examples of electronic archives can be pictures, electronic mail (e-mail), digital documents (Text Files, Data Files, Databases) and so on.

### *B. Electronic Records Management*

Electronic records are recognized as legal proofs of law, since the enactment of Law Number 11 Year 2008 concerning Electronic Information and Transactions. Article 5 paragraph (1) states "Electronic Information and / or Electronic Documents and / or printouts constitute valid legal evidence", furthermore Article 5 paragraph (2) "Electronic Information and / or Electronic Documents and / or their printed results as referred to in article 5 paragraph (1) is an expansion and valid evidence in accordance with the applicable procedural law in Indonesia ". With the enactment of the law on Electronic Information and Transactions, electronic records must be considered and managed properly in the administrative activities of each agency, both government and private agencies, so that the administrative products in the form of electronic records can be accounted for and can facilitate the administration system of an agency.

As with print archives, the management of electronic records also requires a variety of equipment. The equipment used to manage electronic records is hardware and software. Hardware is the physical equipment of a computer that we can see and feel, while software is computer programs that are useful for carrying out a job as desired. Whereas the hardware used in managing electronic records includes:

- Computer / Laptop
- Print Scanner
- Storage Media (Harddisk, Flashdisk, MMC, CD)

The process of managing electronic records has a difference with managing print archives. According to Read & Ginn, the electronic records management cycle consists of: creation and storage, distribution and use, maintenance, and disposition.

The difference between the print archive and electronic file cycle lies in the process of creation and storage that takes place in one stage, and the process of distribution and use also runs in one stage, while the management of print archives, each stage stands alone as a process of activity. Thus the management of electronic records is more efficient. Management of electronic records based on the above cycle can be explained as follows:

#### *1) Creation and Storage*

In managing electronic records, creation and storage can be done in one stage. Electronic records created from scratch using computer technology can be directly integrated into the electronic archive management system, but for records that are the result of digitization, it is necessary to transfer them. According to Sukoco Badri in Saifudin, the methods used in

the transfer of providing documents include:

*a) Scanning*

Transferring media using scanning or scanning documents will produce image data that can be stored on a computer. The scanning process can be done by using print media scanners. By scanning documents / print archives, you will get the results in the form of digital files in an image format which can then be stored and processed on a computer.

*b) Conversion*

Converting documents is the process of converting a word processor or spreadsheet document into permanent image data to be stored on a computerized system. Converting documents can be done with a computer, for example converting a Microsoft Word document into an image in jpg / png format, or converting it into a pdf document format and / or vice versa then being saved on a computerized system.

*c) Importing*

This method transfers data electronically such as office documents (e-mail), graphics or video data into an electronic document filing system. Data can be moved by dragging and dropping into the system and still using the data format. Data can also be moved by copy and paste into the system while still using the original data format.

After the electronic file is created or the print archive process has been digitalized and entered into a storage system, it must be ensured that the file is stored correctly.

Storage system must consider changes in technology both hardware and software. In addition, electronic archive storage media must support hardware and software systems, so that files can be read continuously even if they are moved to the latest software and hardware.

One of the most important things to consider in storing electronic records is a back-up system, because electronic records are vulnerable to being lost by viruses or damage to hardware or software systems. To avoid the threat of losing electronic files, you can do a routine back-up schedule, make copies on various media, or you can also store them in online data storage. Electronic archive storage can be done in 3 ways, namely:

*a) online (connected)*

This online storage is the latest media in information technology that functions to store digital files. This media can be used to backup electronic files that can be downloaded at any time when needed. Until now there are at least five online data storage that can be accessed free of charge namely google drive, skydrive, dropbox, box, mediafire. Mediafire even provides 50 GB of data storage for free for one account.

*b) Offline (disconnected)*

Offline storage can be done by utilizing magnetic and optical storage media such as hard disks, digital audio tape, video tape, compact discs (CD), digital versatile discs (DVD), and so forth. Hard disks that have a capacity of 2 TB (terabytes) when used to store image files that are on average 5 MB (megabytes) will be able to hold around 400,000 images. Another example is 1 CD-RW with a capacity of 700MB can store documents in PDF text format of ± 7000 sheets if the average capacity of 1 sheet of 100 KB documents or ± 700 JPEG photos if the average capacity of 1 photo is 1

Mb. This means that electronic archive storage is clearly more efficient than print archive storage.

*c) Nearline (semi connected)*

The nearline (semi-connected) storage model is suitable for storing electronic records that are dynamic inactive, namely electronic files that are still used as daily administration but the frequency of their use has begun to decrease. The right media to store electronic files are external hard drives and disk drives. Both storage media are easy to carry everywhere and without having to be connected online to access the documents inside.

*2) Distribution and Use*

Distribution and use of electronic records can also be done in one stage / cycle. An example of the distribution of electronic records carried out by utilizing electronic media is microfilm. Microfilm is a tool for processing photography, the way the media works is by recording documents / archives in the form of films with reduced size, aiming to facilitate storage and use. The main benefit of using the microfilm media is to support the smooth operation of daily operations and rescue (preservation / storage) and the use value of microfilm is the same as the value of archives / original documents.

The choice of equipment in the distribution and use of electronic files is very dependent on the needs, abilities and goals of the organization. Therefore, the selection of appropriate equipment and equipment, will facilitate the organization's archival activities. Example of the distribution of mail management in the Electronic Service Manuscript System (TNDE) within the Ministry of Public Works that for electronic mail (e-mail) incoming documents the incoming mail will be processed in the application (TNDE) which is equipped with physical scanning results of the incoming mail document, then all data that has been inputted will be stored in the inbox database. Whereas outgoing mail must also be equipped with physical scanning results of outgoing mail documents, then stored in a database of outgoing mail.

The use of electronic records can preserve and maintain documents or records owned by companies or archival institutions. In this paper the author takes the example of the Electronic Service Manuscript System (TNDE), electronic mail distribution can be done well by utilizing information technology and the internet. The electronic file (scanning results) also has the same value as the original file and is validated in an official letter system. The printed file is kept for administrative evidence while the electronic file is not only kept as an inactive file but is also used for institutional administration activities as an active file.

*3) Maintenance*

Electronic archives are classified as a new type of archive and are widely used by several agencies for daily administration processes. Considering that the forms of electronic records differ greatly from those of printed records, their maintenance must also be different. Maintenance of electronic records can be in the form of securing electronic records themselves, maintaining storage media, their management systems and devices for managing those records. Information security activities in the electronic

archive are as follows:

- Create standard operating procedures that guarantee security against the possibility of unauthorized use of information by unauthorized parties. Electronic file managers can protect it by locking up vital electronic files. Vital archive is an archive that is considered important for the activities of a corporate body. This protection aims to avoid misuse and destruction of electronic files.
- Perform hardware maintenance (hardware), and make adjustments to technological developments at regular intervals.
- Perform software maintenance, and ensure software can be run on the latest technology.

Maintenance of electronic records must be done regularly so that the physical archive is not damaged. Because if the physical archive is damaged then usually the data that is in the physical electronic archive is also damaged too. Some ways that can be used to maintain the physical electronic archive include:

- Using hardware (computers, laptops, hard drives, flash drives), properly and according to procedure.
- Using original (not pirated) archive management software.
- Backing up data / files regularly.
- Keep electronic files in a place protected from magnetic fields, dust, excessive heat, and water.

#### 4) *Disposition*

Disposition or commonly referred to as correspondence is an essential activity in official communication which includes determining the type of letter, the nature, format of the letter that holds the editorial form, the use of letter security facilities, and the signing authority. The process of managing incoming and outgoing letters must attach a letter disposition sheet. In the data entry process will produce an introductory sheet, control card, and disposition sheet. Dot Matrix Printer type that is used to print introductory sheets, control cards and disposition sheets after entering the data entry process of incoming mail is EPSON LX-300 + II.

Management of electronic correspondence both incoming and outgoing letters can be processed with only one computer. Operating system that supports the software about the Correspondence Application must be able to run in the computer system used. The capacity of the hard drive in a computer device must have a high enough resolution, as in computer equipment commonly used in office activities that is approximately 500 GB - 1 TB in order to store the results of the scanning process. In addition to these equipment internet and LAN networks are also needed to support the distribution of mail.

#### *C. Strengths and Weaknesses of Electronic Records*

Broadly speaking, the advantages of managing electronic records compared to manual / print archives are more effective and efficient. This means that managing electronic records can save time, money and even energy. Among the advantages of managing electronic records include:

- The process of finding / retrieving documents faster,

without having to leave the desk.

- The possibility of missing files is very small, because electronic files can only be viewed on the monitor screen or printed without being able to change them.
- Save storage because it uses electronic storage media.
- Damage to electronic archive documents can be minimized because they are stored digitally.
- Sharing documents can be done easily by utilizing internet and LAN technology.
- Security is maintained, because electronic files can be protected or password according to the wishes of the managers, so other people who do not have the authority cannot access them.
- It is easy to perform data recovery, by backing up data into compatible storage media.

While the shortcomings in managing electronic records include:

- Requires competent human resources in the field of archives and information technology.
- The possibility of file damage can occur at any time, for example the server is attacked by a virus or permanently deleted files accidentally.
- The possibility of manipulating files if the protection is not strong.
- Sometimes file storage media are not comfortable / support with new information technology or the latest archive management software.

#### IV. CONCLUSION

Electronic archives are new types of archives with a combination of information technology as the media of its management. Electronic records have the same value as printed files and are recognized as valid legal evidence according to Law Number 11 of 2008 concerning Electronic Information and Transactions. The management of electronic records is considered to be more effective than printed archives in terms of practicality in the creation and storage. Management of electronic records can be done in four cycles, namely: creation and storage, distribution and use, maintenance, and disposition.

Electronic archives can be in the form of archives that are created directly using electronic media or print archives, which are converted into digital archives. Electronic file storage can be done online, offline and Nearline and can be stored in several electronic storage media such as hard drives, CDs, DVDs, etc. Electronic archive security is better protected than print archives because it can be backed up into a variety of compatible storage media, and can even be stored online using internet facilities.

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