Challenges for Archivists in the Digital Era: Service Transformation Traditional Archives Towards Paperless at State Higher Education Institution of Incorporated Legal Entity

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Abstract. This research discusses the challenges of archivists in the digital era, with a focus on the transformation of traditional archival services to paperless in legal entity universities, with Surabaya State University as a case study. Along with the growth of information technology, the implementation of digital archives in academic institutions has become crucial, but still faces various obstacles. The urgency of this study lies in the urgent need to align the archival system with technological developments, improve operational efficiency, and ensure data security and accessibility. The main objectives of this study are to identify obstacles and opportunities in archival transformation, develop a conceptual model for digital archive development, and evaluate its implementation in a legal higher education environment. This article will discuss the research findings, the resulting conceptual model, and lessons learned from the implementation at Surabaya State University. By sharing experiences from these cases, this study contributes to the digital archival literature and provides valuable insights for other higher education institutions facing or planning similar transformations to improve the effectiveness and efficiency of their archival services in the digital era. The results of the study obtained from collecting data from respondents who are archivists and positions related to archives and correspondence concluded that they experienced obstacles in managing and providing manual archive services so that a special system was needed to manage digital archives at Surabaya State University.

Keywords: Archivist Challenge, Transformation, Traditional Archives Services, Paperless, Digital Era.

1   INTRODUCTION

The development of the digital world has become a new challenge in carrying out all aspects of life, including archival activities. Many new problems arise in archival management in the digital era, but unfortunately it is not enough to anticipate them by simply relying on technical competence without additional knowledge in the field of technology.

The transformation of archival services from traditional/manual to paperless is becoming a trend in various organizations. Provisions in Law Number 43 of 2009 concerning archives, Minister of Research, Technology and Higher Education Regulation number 13 of 2015, as well as developments in information and communication technology (ICT) have encouraged more and more private and state universities to change the way archives work from manual to digital. Records management in institutions that have been done manually should be digitized to keep up with the times. The technology offered today provides many conveniences in doing digital archive management. There are many software application systems available that can improve the quality of digital archive management (Nyfantoro et al., 2019). However, digital archive management also poses new challenges for institutions. Asogwa mentioned a number of challenges faced by institutions in managing electronic records such as security and privacy, risk of data loss, authenticity issues, human resources and infrastructure or general management needs (Asogwa, 2012).

The transformation of manual to digital archive management is a trend in various universities, including Surabaya State University (Unesa). Based on initial observations, Unesa is planning to automate archives and offices towards paperless to improve administrative efficiency. However, this effort also faces other challenges, one of which is from the archivist or archive manager itself. Study results (Adi Putranto, 2017)show that technical challenges do not only arise from infrastructure limitations but resistance from existing human resources. It is not only infrastructure that needs focus in developing electronic records management in the digital era, but also the human factor. Institutions must understand that a comprehensive approach to various elements is needed in managing archives in the digital era (Ismail & Jamaludin, 2009). In managing digital-based archives, it will definitely require human resources who have specialized knowledge and abilities in managing archives and knowledge related to information technology. This is a challenge for every archive agency in choosing resources for electronic archive management (Aldahwa Putri, 2022). At Unesa, 70% of archivists are 40-50 years old with a non-archival educational background so it is estimated that they have difficulty adapting to digital technology. In addition, the existing standard archive management procedures are still manual and have not been integrated into the system.

(Aulia Rachman, 2018) said in his research entitled new trends in the role of archivists conducted at the University of Indonesia archive office resulted in one of the new roles, namely digital archivist. Digital archivist means that archivists can organize archives whose media and format are in digital form. Therefore, support is needed from

the institution that oversees it in the form of training for archivist competency development and support in the form of technology provision in improving digital archiving services (Faturohmah & Mayesti, 2021).So that it can be used as capital in creating a paperless office at Unesa.

1.1 Problem Formulation

One of the main challenges in transforming traditional archival services to paperless is the human factor, namely archivists or archive managers in universities. It is necessary to know how archivists prepare and the challenges they face so that university managers can plan the transformation of archives to paperless effectively and sustainably. However, empirical studies on this matter are still very limited, especially in Indonesia. Based on this description, it is necessary to carry out research on how traditional archival services are transformed to paperless in legal entity universities in Indonesia and what challenges archivists face as a result of this change. This research is expected to answer the following questions:

1. What is the description of traditional archival services in legal institutions in Indonesia?
2. How is the transformation planned and implemented to become paperless?
3. What challenges do archivists face in archival transformation?
4. What is the ideal model for transforming traditional archival services to paperless in higher education so that it is effective and sustainable?

1.2 Research Objectives

The main objective of this research is to identify obstacles and opportunities in archival transformation, develop a conceptual model for the development of digital archives, and evaluate its implementation in a legal entity higher education environment. It is hoped that this research can provide practical guidance for similar institutions that plan to switch to digital-based archival services.

1.3 Research Goals and Benefits

The author's targets for achieving research objectives are:

1. Archivist
2. Archive Manager
3. Mail Manager or Operator
4. And other parties related to archives and correspondence

2. METHODS

2.1 Object of Research

Object of researching preparing this research were all aspects related to the activities of archivists within the Surabaya State University to face the digital era. This includes existing policies and regulations, programs that have been implemented, as well as

stakeholders involved in the archive management and service process.

Policies and Regulations. Analysis of existing policies and regulations at Surabaya State University related to archive management and service processes. This includes policies related to creation, namely (creation, receipt, registration, distribution), then use and maintenance of archives which includes (filing active archives, structuring active archives, maintaining archives, transferring archive media, and archives can be used), the next tasks namely the archive depreciation process, this activity functions as a reduction in the number of archives by transferring inactive archives from the processing unit to the archive unit, destroying archives that are of no use value and depreciation of archives is carried out based on the archive retention schedule (JRA) with procedures that must be followed by archivists, namely moving inactive archives, destroying archives, handing over static archives.

Evaluation of programs and initiatives that have been implemented by archivists at Surabaya State University. Stakeholders and Local Communities. Identification of the main stakeholders involved in archive management activities, namely Education Personnel who have the positions of archivist, archive manager, mail operator, and others.

2.2. Data Types and Sources

The data used in this research includes primary and secondary data. Primary data sources will be obtained from interviews, surveys and direct observations with related parties at Surabaya State University. These documents will provide information about the existing policy framework and the achievements that have been achieved in archive management and services so far. Meanwhile, secondary data will be obtained from official documents, eports and publications related to the digitization of archives within the University environment. These reports will be an important reference source in analyzing trends, best practices, and lessons learned in the process of digitizing records management and services.

2.3 Data collection technique

Data collection techniques that will be used include:

a. Interview. Conduct in-depth interviews with various related parties, such as educational staff at Surabaya State University. Interviews will provide a deeper understanding of the views, experiences and expectations of various stakeholders regarding the digitization of archive management and service processes.

b. Survey. Conduct a survey of educational staff within Surabaya State University, consisting of archivists, archive managers, mail operators, and others, to collect quantitative data about knowledge, perceptions, and behavior related to archive management. This survey can be conducted either in person or via an online questionnaire, depending on respondent preference and availability.

c. Observation. Conduct direct observations of various activities and programs that have been implemented at Surabaya State University regarding the archive management and service process so far. These observations will provide a more concrete understanding of

the effectiveness and challenges faced in implementing these programs.

2.4 Study Stages

The study stages will include:

a. Policy Analysis. Analyze existing policies and regulations related to records management to identify strengths and weaknesses as well as opportunities and challenges.

b. Program Evaluation. Evaluate the programs that have been implemented by educational staff in the process of managing and servicing digital archives to determine the level of success and impact.

c. Identify Needs. Identify the main needs and priorities in the digital archive management and service process based on the results of the analysis and evaluation that has been carried out.

3. RESULTS AND DISCUSSIONS

3.1 Implementation of Data Collection

Through a survey and interview process with archivists, archive managers, managers/operators correspondence, and others around Surabaya State University with the following question variables:

3.2 Data processing results

After processing the data using SPSS (Statistical Package for the Social Sciences). This is software used for statistical analysis, manipulation data, data processing, and report creation in various scientific disciplines, including science social, natural sciences, medicine, business and other research.

3.3 Descriptive Analysis

In the following section, the researcher will describe the data obtained from respondents. Descriptive data provides an overview of the respondent's circumstances or conditions that need attention

3.3.1 Descriptive Characteristics of Respondents

a. Characteristics of Respondents Based on Position.

The samples in this research were educational staff at Surabaya State University who worked as archivists, archive managers, mail operators, and others. The results of grouping respondents based on position are listed in Table 1.

Table 1. Respondents by Position

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Archivist	6	20.0	20.0	20.0
Archive Manager	3	10.0	10.0	30.0
Manager/ Letters Operator	9	30.0	30.0	60.0
Other	12	40.0	40.0	100.0
Total	30	100.0	100.0	

In this research, the sample consisted of 30 people. In this research, the respondents were 6 archivists, 3 archive managers, 9 letter operators, and 12 others. The majority of respondents were from other positions, possibly because there were 17 archivists at Surabaya State University.

b. Characteristics of Respondents Based on Age

The results of grouping respondents based on age are listed in Table 2.

Table 2. Respondents by Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 27-36 Year	10	33.3	33.3	33.3
37-46 Year	11	36.7	36.7	70.0
47-50 Year	3	10.0	10.0	80.0
50-60 Year	6	20.0	20.0	100.0
Total	30	100.0	100.0	

In this study, the majority of respondents were 27-36 years old, 10 people and aged 37-46 years as many as 11 people. Meanwhile, the rest are divided into ages 47-60 years. Thus it can be said that the majority of respondents in this study were aged 27-46 years.

c. Characteristics of Respondents Based on Education

The results of grouping respondents based on their latest education are listed in Table 3

Table 3. Respondents Based on Last Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Senior High School	6	20.0	20.0	20.0
Bachelor	19	63.3	63.3	83.3
Postgraduate	5	16.7	16.7	100.0
Total	30	100.0	100.0	

In this study, the majority of respondents had a bachelor's degree, 19 people, 6 people from highschool, and the remaining 5 people were postgraduates.

3.3.2 Descriptive Analysis of Research Variables

In compiling and presenting data so that it is easy to understand, the data is described using descriptive analysis. The variables in this research are statements from the archivist. These variables are measured using a Likert scale. The lowest score is 1 (Strongly Disagree) and the highest score is 5 (Strongly Agree). In calculating the interval as follows:

$$\text{Intervals} = \frac{\text{(highest score-lowest score)}}{\text{Total}}$$

$$= \frac{5-1}{5}$$

$$= 0.80$$

Based on the calculations above, the criteria distribution scale is as follows:

Very Low   : 1.00 – 1.79
Low   : 1.80 – 2.59
Medium   : 2.60 – 3.39
High : 3.40 – 4.19 Very
High : 4.20 – 5.00

Results of Exogenous Variable Analysis Exogenous variables are shown in table 4.

Table 4. Results of Analysis of Exogenous Variables Exogenous variables

Code	Question	Mean	Criteria
X.1	There has been an archive storage process carried out at Unesa	4.60	Very high

X.2	There has been an archive service process carried out at Unesa	4.47	Very high
X.3	Manual archiving media is optimal and helps in archival storage	4.00	High
X.4	Manual archiving media is optimal and helps in archival services	4.13	High
X.5	There are obstacles faced when storing archives manually	4.00	High
X.6	There are obstacles faced when servicing archives	3.87	High
X.7	As part of the Unesa academic community, you understand with digital technology	4.57	Very high
X.8	I quickly learn/adapt to use an application system	4.50	Very high
X.9	The archive digitization process has been carried out at Unesa	4.33	Very high
X.10	The form of archive digitization that has been carried out at Unesa is document scanning	4.37	Very high
X.11	The form of archive digitization that has been carried out at Unesa is the use of a correspondence application (Integrated Unesa E-Office)	4.60	Very high
X.12	The use of digital storage and archiving can be helpful and useful to support daily work/activities	4.63	Very high
X.13	There are obstacles experienced regarding the digitization of archives at Unesa	3.87	High

X.14	As part of the Unesa academic community, we are ready to start implementing paperless in the process of archival storage and services	4.33	Very high
X.15	Requires an application system related to storage and archive services at Unesa	4.77	Very high
Average		3,87	High

Based on the analysis results shown in table 4.4, the average respondent's assessment of the statement variable is included in the Very High criteria, namely 4.77. The respondent's highest rating was on the statement item with code X_15, namely "Requires an application system related to storage and archive services at Unesa" amounting to 4.77. The lowest assessment was found in the statement item "There are obstacles encountered during archive services" and "There are obstacles experienced regarding the digitization of archives at Unesa" with an average value of 3.87 with High criteria. These results show that respondents need an application system related to archive storage and services.

4. CONCLUSION

The archive management application is expected to help simplify the process of managing digital archives, from storage to centralized archive services in one door. Currently, at the State University of Surabaya there is an E-Office Application to store dynamic archives in the form of letters created by the State University of Surabaya and incoming letters from external parties to the State University of Surabaya. In addition, there is a JDIH (Legal Documentation and Information Network) application that stores regulations and decrees issued by the State University of Surabaya. In addition, all activity processes at the State University of Surabaya have used a system so that all documents have been digitized. However, a system is needed that specifically handles dynamic and static archives at the State University of Surabaya in order to facilitate the storage and search of archives that can be carried out by the entire academic community internally.

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6. DISCLOSURE of INTERESTS

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