

E-DOCUMENTS MANAGEMENT SYSTEM: APPLICATION IN PRESS INDUSTRY

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Abstract

This paper reports e-Documents Management System and its application in Industry. The documents managed include undergraduate students' electronic theses with further implementation in Press Industry. E-documents is considered important for press industry, then the system was trialed in this industry. Result of study shows the e-reserve has benefit for a long-term in this industry for easy retrieval of their electronic documents.

Keywords: e-reserve, electronic document, press industry

1. INTRODUCTION

E-Reserve is defined as a collection of electronic materials made available over one or more computer networks (Kristof, 1999: 1) in Cheung (2010:1). In the concept of E-Reserve, the type of collections is an electronic document (file) instead of printed documents. E-Reserve can be considered as opposed to the collection of hardcopy materials (Cheung, 2010: 2). The need for E-Reserve has been considered important by various agencies and organizations, including by universities in managing electronic documents such as intellectual and historical documents. Many researchers have trying to manage electronic documents for many purposes, for example the work by Yao, Trappey, and Ho (2003).

The need for E-Reserve was also considered important in Mathematics Education Program, Universitas Sultan Ageng Tirtayasa. Each semester, this unit generating a lot number of undergraduate theses that can be considered as intellectual and historical documents. It is not possible to reserve these documents in the printed format for a long term due to limitation in storage space capacity, nor in just plain storage of electronic documents due to difficulty in handling and retrieving of the electronic documents in the future. Based on observations related to these historical and intellectual documents, there were at least three problems related to the reservation of these historical and intellectual documents: 1) unorganized, 2) ineffective for use or optimalization, and 3) difficulty for handling, reserving, and retrieving the documents, because the number of these documents is continuing to grow rapidly.

These issues were proposed to be solved through the implementation of Information and Communication Technology (ICT), given current condition of ICT infrastructures and facilities available that need to be considered in implementation of e-reservation system. The solution includes the design and development of e-reservation system to manage historical and intellectual documents in Mathematics Education Program. Furthermore, this development will also encourage the adoption of new technologies in education.

3. RESEARCH METHODS

Design and development are focused to e-reservation system for intellectual and historical electronic documents. The proposed concept (refer figure 1) is started from electronic document component, archiving in the E-Reserve System, for later publish, use or reuse.

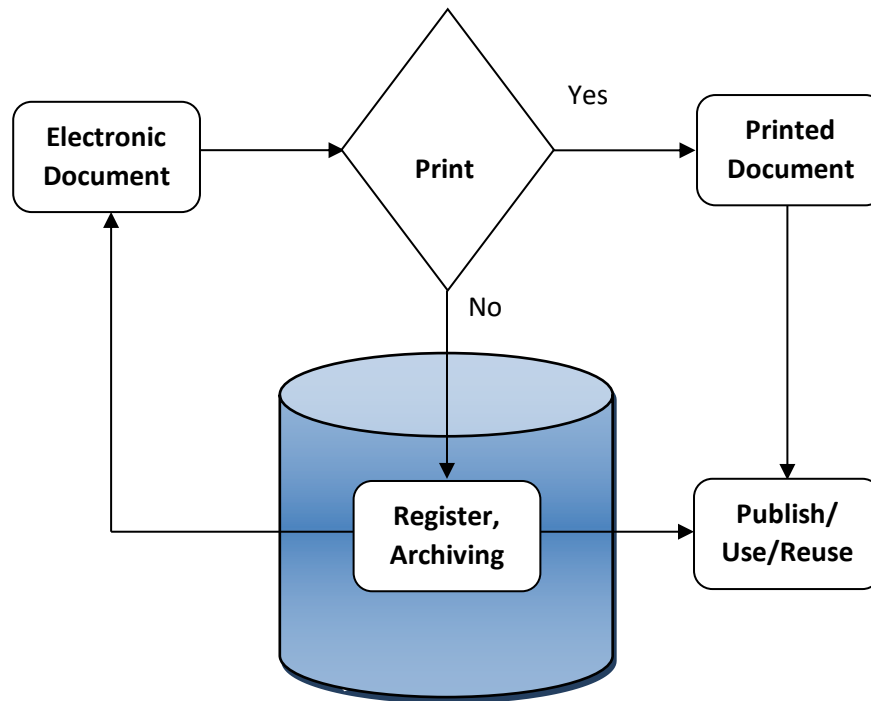


Figure 1: General Concept of Proposed E-Reserve System

Design and development model was based on a model developed by Sutopo (2003), with three stages as follows: 1) Concept, through identification of problems, formulates the goals, and needs analysis through surveys. 2) Design, product designed as an e-reservation system for historical and intellectual documents, and 3) Assembly, based on the concept and the design. Development of research procedures include 1) analysis of the product to be developed with supporting activities: surveys, planning, formulation of goals, and testing on a small scale, 2) design of the initial system, and 3) field trials to obtain information about the shortage products and revision.

The design and development was carried out using Microsoft Visual Basic. Visual Basic is a computer programming language. Programming languages are the commands understood by the computer to perform certain tasks. Visual Basic programming language, developed by Microsoft since 1991, is a computer programming language that supports object (Object Oriented Programming = OOP).

The development of this product with visual basic would be similar with the development of E-records management system (ERM). The registration process is effective if all registration information is relevant, and the relationship between records must always be maintained and managed continuously. It was also considered the reliability of the proposed product in the present and future, even after the technology that created the document has been superseded.

4. RESULTS AND DISCUSSION

Program design was completed by realizing the ideas in sketch form. It then followed by

refined and adapted to the working ability of applications with Microsoft Visual Basic. Following are step by step of the process: (1) Development, the manufacturing process carried out by utilizing knowledge through the internet and the community of programmers. (2) Survey and Consultation, carried out to know the needs and readiness, including the survey. (3) Installation, including the creation of installer for installation in the official computer.

The method used in this stage was the survey method. Surveys conducted within the scope of the Mathematics Education Program, Universitas Sultan Ageng Tirtayasa. The focus of this survey was to know the current condition and the readiness for the implementation of e-reservation system.

The result of the survey shows, according to the respondents, sooner or later the e-documents must be needing a new processes and methods for its management. Respondents from the students and lecturers explained that they did not able to create their own electronic document. Electronic document as explained here is not just the conversion from the format of Microsoft Word files to PDF but have a complete document structure.

Printing industry in Serang City is very important to support the activities of office, educational, and government as more and more offices, educational institutions, and governments require the services of the industry to facilitate their daily activities. Printing industry in the town of Serang generally has switched from traditional to electronic printing techniques. In other words, various master of press products prepared in electronic form before it is made in its hard material form.

One of the industries concerned with the management of electronic documents is Press Industry. The company in this industry is interest to create, store and manage electronic documents to then be printed and published or issued in accordance with needs. Sometimes they also need to re-use of electronic documents that once made or used.

However, the management of electronic documents, particularly in Small and Medium Enterprises (SMEs) in Printing Industry in Serang City was seen as less effective and efficient. Because managed often without a clear system of administration. In fact, the e-reservation system, developed above, for historical and intellectual documents, would be valuable as add value to the industry. It is happen because the e-reservation of historical and intellectual documents could make the process work more effectively and efficiently, including the documentation of the work that has been generated over the years.

However, the e-reservation which was developed before could be solutions for this industry. That is because this software has the characteristics:

- Archiving of electronic documents in storage which has been prepared
- Has a catalog and the search for required electronic documents that have been registered and archived.
- Facilitate the process of electronic documents management, including efforts to obtain the return of a electronic document although it has been stored for so long (and may have been forgotten)

Activities

E-Reservation system that has been before can be viewed as a science and technology solutions that can be useful for society, in this case the SME Printing in Serang City. The partner in this activity was Percetakan Serang. Percetakan Serang is the oldest print SME in Serang City. In the early days of independence of Republic Indonesia, it was trusted by the government to print the ORI (Oeang Republic of Indonesia).

Activities began with a re-design science and technology that had previously been owned by the team (e-reservation system for e-theses). Then, several follow-up studies were conducted. In general, the e-reservation system for e-documents in press industry was a re-design of e-reservation system for the e-theses in the Universitas Sultan Ageng Tirtayasa.

Today's digital printing will produce a number of documents in electronic form. To apply a

good system, these points have to be considered

- a good understanding of documents and information systems that support it;
- acquisition procedures and the creation of documents as part of the administrative system;
- electronic documents storage procedures designed to ensure the integrity, quality and security;
- procedures to ensure easy and smooth access to all documents as long as necessary;
- procedures for evaluating, auditing, scheduling, and destructing such of documents in accordance with applicable regulations;
- culturally oriented work on the utilization of information technology;
- Skill and competency for all users on documents handling.
- Electronic documents need to be stored and maintained in a long time, for this there is need attention for the accessibility of the documents.

Partner, contribute actively as well as providing materials in the form of electronic printing files they produced from year 2006 to 2010. These materials are then used in a simulated electronic document management. Prototype has been developed to organize data and information. Furthermore, the process of conversion from the printed documents into electronic documents and vice versa is also not difficult as showed in Figure 4. Partner, in general is the subject activity. Here are some of the activities associated partners: Partner support the Electronic Documents are collections that are managed by Electronic reservation system. These Electronic Documents were placed in the CDs Collection for registering and archiving in this system.

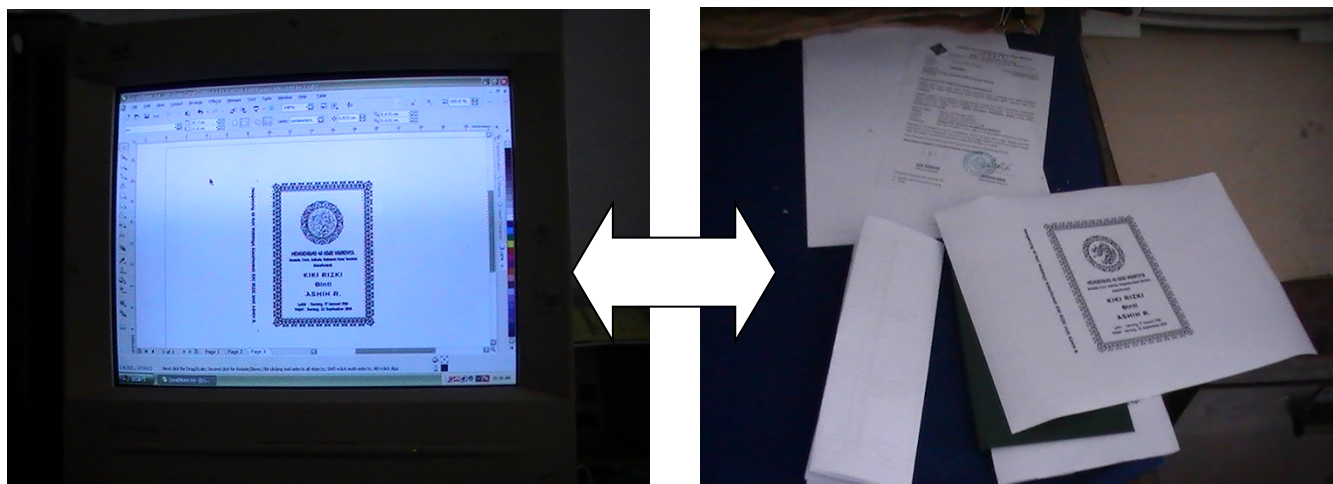


Figure 2: An example of electronic and printed documents in Press Industry.

Electronic Documents in a certain period of time (eg months) will be managed in a single storage; in this case was a CD Collection. Here is an example display of Electronic Documents Collection CD.

The use of this product is started by installing this software. It can be done by Insert the CD Installer, then click Setup to start the installation. If the installation is successful, then select the start menu - programs - Universtas Sultan Ageng Tirtayasa – then the application icon to use it. There are also several buttons with different purpose for example to exit the program, to open the manuscript collections, to locate the data or information, to seek collection and to select the drives to be used when inserted a storage media (for example CD).

Solving the Obstacles in Press Industry

It was claimed that implementation of e-Reservation System contribute in solving the press industry obstacles, particularly in management of electronic documents in the printing industry. Electronic documents and their management is an important aspect for the industry.

The obstacles which were solved are:

- Difficulty in registers and archiving of electronic documents
- The absence of automation in a register and archive electronic documents
- The absence of the systematic and structured data storage of electronic documents, making it harder to get a particular electronic documents when required

The system was also supposed to make the process of archiving documents in storage which has been prepared in a systematic and structured way, so that it can be easily recovered even after such a long storage (several years).

Discussion

According to reflection from Percetakan Serang, among the benefits of this system is this product would be able to give added value to the industry because it can make the process of work is relatively more effective and efficient, through easy retrieval of e-documents including the documentation of the works that has been generated over the years. Based on discussion, in the future, the collections may be considered as web-based or to be accessible via the internet.

In addition, usually in the press industry, a previous work can be re-used as a template for similar task in the future. In general it was also expected to be optimized by other organizations including the Library Faculty, University Library, Faculty, University, and Research Institute (LPPM) to organize data and information of historical and intellectual electronic documents, including theses, e-Paper and various other electronic texts (e.g. scans of ancient inscriptions).

CONCLUSION

Final prototype e-reservation system has been realized. This product can be used in the reservation of historical and intellectual electronic documents. In principle, any other electronic documents could be reserved in this system. Reservation process has an advantage in registering and storing the data for retrieved in the future. Through the implementation, it was concluded that this product has benefit for a long-term archiving of historical and intellectual electronic documents.

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