REVIEW OF INTERNATIONAL GEOGRAPHICAL EDUCATION

ISSN: 2146-0353 ● © RIGEO ● 11(6), SPRING, 2021

www.rigeo.org

Research Article

Building a Digital Library in a Manufacturing Company

Aminudin, S.T., M. Kom[1]
Faculty of Social Science and Political Science
Widyatama University Indonesia
aminudin.mkom@widyatama.ac.id

Egi Abinowi, S.T., M. Kom[2]
Faculty of Social Science and Political Science
Widyatama University Indonesia
egi.abinowi@widyatama.ac.id

Abstract

Every company, both government and private, which runs business activities, cannot be separated from document recording/archiving. Documents are created to record everything related to various activities ranging from attendance data, purchase data, sales data, financial data, audit data, training data and others. Good documentation and archiving will make it easier for each section to be audited by both internal auditors and external auditors. With good documentation management, ideas, ideas and thoughts that have been done previously will be stored and can be reopened when needed. The rapid development of information technology has a positive impact on document storage/archiving methods. Currently, document storage/archiving can be overcome by changing the form of paper printed documents into digital form and stored on storage media. In manufacturing companies, currently there are still many companies that archive documents by storing them in their respective departments so that the availability of shelves in that department increases and this has an impact on the availability of space. So that document access can be done centrally, archiving is needed like a library. Documents that need to be archived at manufacturing companies include SOPs, production data, sample test data, ISO data, customer audit data, supplier audit data, training data, book/reference data and others.

Keywords

Documents, Archives, Libraries, Information Technology, Digital

To cite this article: M. Kom, A, and M. Kom, E. (2021) Building a Digital Library in a Manufacturing Company. *Review of International Geographical Education (RIGEO), 11*(6), 589-595. doi: 10.48047/rigeo.11.06.73

Submitted: 10-10-2020 ● **Revised:** 14-12-2020 ● **Accepted:** 18-02-2021

Introduction

Every company, both government and private, which runs business activities, cannot be separated from document recording/archiving. Documents are created to record everything related to various activities ranging from attendance data, purchase data, sales data, financial data, audit data, training data and others. Although the document storage period has a limit, documents need to be stored and maintained so that the data remains intact and easy to find when needed. To do the storage and maintenance of documents required good documentation. With good documentation management, ideas, ideas and thoughts that have been carried out previously will be stored properly and can be reopened when needed.
Documents in each company, be it service companies, trading companies, construction companies, and manufacturing companies have various types of data. Each company has a different way of filing and managing documents, some are stored in hard copy and some are in soft copy. As time goes by, the company is growing and the documents that need to be stored are increasing. With the increase in the number of documents, it will bring problems to the availability of storage space. Therefore we need a way so that these documents can be stored properly and safely without taking up space.
Currently the development of information technology is very fast and leads to automation. Given the rapid development of information technology, documents have begun to change shape, from documents in the form of paper prints to digital documents/files/videos. Documents are converted into digital form and stored on storage media. Currently, there are still many manufacturing companies where each department archives documents, when in fact for documents of a general nature, these documents can be stored in the same place in an integrated manner. So that document access can be done in an integrated manner, archiving is needed like a library. With the library, general data can be stored and integrated so that people who need it can easily find it by accessing it directly according to the required data.
Based on the explanation above, the authors are interested in conducting research on manufacturing companies with the title "***Building Digital Libraries in Manufacturing Companies***".

Literature Review

Document

The definition of document according to the general Indonesian dictionary (1976) is as follows: (1) Document is something written or printed that can be used as evidence or information, such as birth certificates, marriage certificates, agreement letters. The Attorney General studied documents relating to corruption cases; (2) Documents are essays sent by post. In general, the cost of documents is cheaper than regular mail. The definition of a document taken from the dictionary confirms that a document has meaning as something written and printed as evidence if needed.

Documentation

The Dictionary of Library and Documentation Terms by Stam et al. (2001) limits the definition of documentation as follows:

1. Materials belonging to any type, shape and nature where information is recorded
2. A written or sculpted record, which conveys information in the form of facts; Recordings can be graphic, acoustic or haptic (map books, manuscripts, pictures, magazine clippings). Works recorded in a language, symbol or other signs.
3. Recording of information in any form, whether in the form of writing, alphanumeric, images, or something that can be heard. There is now a tendency to refer to everything contained in a collection, regardless of its type or form, as a document. Documents are often interpreted as books or other forms of recording such as films. See also archival documents.

Early in 1951 the Documentation Committee of the Special Library Association (SLA) defined documentation as the art of compiling:

1. Document reproduction.
2. Document distribution
3. Use of documents

The Encyclopedic Dictionary of Library Science and Information Technology, Vol.I defines documentation as follows.

1. Activities of collecting, classifying, and seeking to make documents (records of various intellectual activities) easily accessible.
2. Pointing to scientific records and sources of knowledge, organizing various records in a systematic way so as to enable them to be recovered quickly and accurately, dispersal by sharing both knowledge and the sources of knowledge itself,
3. Also refers to the recording, organization and dissemination of certain knowledge (Aslib).
4. Also refers to the science of collecting, storing, organizing records of information or documents so that they can be accessed optimally.
5. This includes activities related to special libraries plus initial activities in the form of storage and reproduction of materials followed by retribution activities.
6. Refers to the science of preparing the presentation and preservation of scientific records, providing services about the content contained, quick reference and related matters.
7. Refers to procedures related to the accumulation of knowledge storage so that it is available for further scientific development.
8. Refers to art that makes recordings easy to use, especially science, which includes presentation, reproduction, publication, distribution, collection, storage of subject analysis, organization and search.
9. Collection and conservation, classification and selection, dissemination and use of information.
10. Refers to the appointment of a number of complex activities including the communication of specific information including activities related to special librarianship plus a number of activities for preparing and reproducing materials and sequential activities in distribution. (Mortimer Taube).
11. A set of possible techniques for structuring the presentation, organization and communication of a particular scientific record, in order to provide maximum access and use of its information content.
12. Refers to the identification, investigation, collection and use of documents (French Union of Documentation Services).
13. In relation to computing, preparation and production of documents into systems analysis, programming and operating systems. A good document includes the main elements in the maintenance of computer systems, especially when there are changes or modifications made by the development of computer software and hardware.

From the various definitions and descriptions of the documentation, it has provided an overview of the meaning of the document so that the following conclusions can be drawn:

1. The word document comes from the Dutch language document and in English with the same spelling, namely document. In Latin it is written documentum.
2. Basically a written or printed document and can be used as evidence of a statement.
3. Documents can be in the form of letters, charter deeds or other records.
4. The document that has the strongest legal value is the original document.
5. Useful documents, among others for

a. source of information;
b. sources of scientific research/research;
c. evidence of the validity of a statement.
d.

Library and Documentation Relations

Libraries and documentation cover many of the same fields of study, provide similar services, and use so many of the same tools that the question arises of what exactly is the difference between libraries and documentation. Bjerregaard, Lauring, and Klitmøller (2009) discussed that the library at the beginning of its development was a simple place to store manuscripts and books. After books were no longer handwritten but printed, the number of books published continued to increase, and the function of the library also increased. From a place to store books, libraries become distributors of information contained in publishing. Therefore, to be able to fulfill its duties,

library collections must be recorded and organized so that the information stored in them is easy to find again. Initially library collections were organized according to broad subject areas. Then also began to compose bibliographies on certain subjects.
Documentation as a technical term was introduced by Paul Otlet and Henri La Fontaine at the end of the 19th century in Brussels (Belgium). They plan an international bibliography covering all fields of science. In this highly ambitious endeavor Otlet and La Fontaine used librarian techniques and strategies. They began to record the works listed in the library catalog. For the purposes of the bibliography, they compiled a new classification based on the Dewey Decimal Classification (DDC), a classification chart compiled by the librarian Melvin Dewey in 1876. The new classification system was the Universal Decimal Classification (UDC) published in 1905.
In compiling this extensive bibliography, Otlet and La Fontaine also attempted to make a thorough analysis of the subjects. To distinguish their activities from the activities of librarians at that time, they named it documentation. So, basically documentation activities are library activities that are more directed and deeper into subject analysis.
Librarians consider documentation as an aspect of library services that emphasizes the service and dissemination of scientific information so that it requires mastery of a field of science. In the field of documentation, many scientists are involved in this field because of their attention to the literature of their field. They call themselves documentaries because most of them openly despise the librarian profession. When quarrels about libraries and documentation escalated, there was someone whose identity was unknown, setting limits for documentation, namely librarianship practiced by amateurs. (Shera, 1966)

Information Technology

The definition of information technology according to Aksoy and Denardis is: "Information Technologies are system of hardware and/or software that capture, process, exchange, store, and/or present information, using electrical, magnetic, and/or electromagnetic energy" (Dong, Karhade, Rai, & Xu, 2021).From this definition, it can be concluded that information technology is a system in the form of hardware and / or software that can capture, process, change, store and / or present information using electrical energy, magnetic energy, and / or electro-magnetic energy. The definition of information technology according to Richardus Eko Indrajit is "a technology related to processing data into information and the process of distributing the data / information within the boundaries of space and time" (Wang, Sun, & Aichun, 2020).

Hardware / Software

Hardware is computer hardware, in outline it consists of three main components, namely: Processor, Memory and Input / Output Devices.

Input device:

- Mouse
- Keyboard
- Scanner
- Webcame
- and others

Output device:

- Monitor
- Printer
- Speaker
- and others

Output device:

- Monitor
- Printer
- Speaker

- and others

Software

Software is a program created by programmers to run computer hardware. The software contains a set of instructions for processing data.
The software will translate human language into machine language so that the computer hardware understands and executes the instructions given by the user and gives the desired results. Software is generally used to control hardware devices (often called device drivers), perform computation processes, interact with other more basic software (such as operating systems and programming languages) and others.

Method

This research is a type of descriptive research. Descriptive means to provide an overview of the design of a special library, namely a digital library in a manufacturing company. This library can be used as an information provider for all workers who have access rights to the system to be able to view documents, files, photos and videos in accordance with the given authority. It is hoped that with this digital library, all the information needed by both upper management and lower level management is available properly.
This research was conducted by observing how a manufacturing company stores and documents various important data.

Analysis

Every company has various documents, but some of these important documents need to be stored and managed properly so that they can be used as needed. The documents that are usually stored are as follows:

1. SOP Data (Standard Operating Procedure)

This SOP data contains all the rules/procedures that apply in the company in various activities in the company.

2. Product Sample Testing Data

This sample test data contains all data related to product testing from the first test to the last test so that a product that is ready for mass production is formed.

3. ISO Document

ISO documents contain all documents used by all parts of the company in a standardized format.

4. Customer Audit Results Document

The customer audit result document contains all documents regarding the audit results / customer findings in the field related to SOPs and products produced.

5. Supplier Audit Results Document

The supplier audit result document contains all documents regarding the audit results/company findings for each supplier related to SOPs and products sold by suppliers.

6. Data Complain Customer

This data contains all customer complaints along with analysis and decisions made in accordance with customer complaints.

7. Training Data

This data contains all training that has been carried out by all employees as well as training modules and videos.

8. Book/Reference Data

This data contains a catalog of all book/reference data in the library. To build a digital library in a manufacturing company, infrastructure needs to be prepared, including:

Computer network device

The computer network uses a LAN with cable/WIFI media. The hardware required is: Switch Hub, UTP / STP cable, RJ45 network connector, Access Point (WIFI).

Server computer equipment

For servers, it is better to use a build up server with the latest generation maximum specifications so that when used it can run optimally. For the operating system, you can use a linux/windows server according to the needs and capabilities of each company.

The client computer device.

For client computers, you can use a build up or assembled computer with a minimum specification of the processor using the Intel Core i3 specification, 8 GB RAM, 1 TB HDD. For the operating system, you can use Linux / Windows.

Finger Print device

Finger print is used for attendance in / out of the library, can use fingers or RFID so that employees no longer need to write attendance on the arrival book.

CCTV device

CCTV devices are used to record all activities that take place in the library. So that the video recording is not full, it can be arranged automatically saving/deleting recordings according to needs, either weekly or monthly.

Barcode reader

Barcode reader is used to input book/reference data borrowed by library staff/members to make it easier for admins to input.

Printer

The printers used are printers for making reports and printers for printing barcode labels.

Scanner

Scanner is used to scan from paper prints into files

In addition to infrastructure in the form of hardware, application programs, both front end and back end, are also needed. The application program uses a web-based application where the program work can be carried out by internal IT or third parties/developers. The application program must be able to meet the operational needs of digital libraries. The functional requirements for the application are:

1. Input user/user data.
2. Validate the user at login to avoid intruders and filter the active menu according to the authority that has been set.
3. Create menu authority according to user.
4. Input product data, product testing, ISO documents, ISO audit results documents, customer audit results documents, supplier audit results documents, customer complaints data, training data, book/reference data, loan and return data.
5. Save files, modules and videos.
6. Inputting attendance data into/out of the library.
7. Displaying product reports, product testing, ISO documents, ISO audit results documents, customer audit results documents, supplier audit results documents, customer complaints data, training data, book/reference data, borrowing and returning data, library entry/exit attendance data as needed.

8. Display files, modules and videos.

For human resources who will manage this digital library, at least it is managed by a digital librarian or archive department who has the ability to manage documents/files and is trained to use computers and all devices used in digital libraries.

Conclusions and Suggestions

Conclusions

With the existence of a digital library in a manufacturing company, it is expected that all important documents can be stored properly in the form of digital files so that they are easy to find and can be used when needed. Users from all levels of employees ranging from upper management to lower level management can take advantage of digital library facilities in accordance with established authorities. Thus, the information needed will be easier to find and use in accordance with the user's authority.

Suggestions

This paper is still in the development stage so it can be developed for similar companies and other companies, both in terms of hardware/software infrastructure and SOPs.

Reference

Bjerregaard, T., Lauring, J., & Klitmøller, A. (2009). A critical analysis of intercultural communication research in cross-cultural management: Introducing newer developments in anthropology. *Critical perspectives on international business, 5*(3), 207-228. Doi:https://doi.org/10.1108/17422040910974695

Dong, J. Q., Karhade, P. P., Rai, A., & Xu, S. X. (2021). How firms make information technology investment decisions: Toward a behavioral agency theory. *Journal of Management Information Systems, 38*(1), 29-58. Doi:https://doi.org/10.1080/07421222.2021.1870382

Shera, J. H. (1966). *Documentation and the organization of knowledge*. Retrieved from https://agris.fao.org/agris-search/search.do?recordID=US201300316993

Stam, D. H., Loup, J. L., Davis, R. H., Kasinec, E., Yocum, P., Krēsliš, J., & Siemaszkiewicz, W. (2001). *International Dictionary of Library Histories*: Fitzroy Dearborn. Retrieved from https://books.google.com.pk/books?id=Zoq_TtEN54IC

Wang, K., Sun, W., & Aichun, Z. (2020). *Research on the Application of Electronic Information Technology in the Internet of Things.* Paper presented at the Journal of Physics: Conference Series. Doi:https://www.doi.org/10.1088/1742-6596/1570/1/012067