

Products Facility Management

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ABSTRACT

The information research system continues to be developed and directed at leading research National Institute of Technology (ITN) Malang in accordance with the Research Strategic Plan of ITN Malang. One of them is a computer system in a complete integrated facility management activity, such as this research scheme

Facility management is the management of control of facilities and infrastructure based on conditions and workplaces in accordance with what is needed and can be used by all sections, for example for administrative management, logistics management, facilities and infrastructure management, maintenance and repair management to support effectiveness. Facility management integrates several disciplines, such as economics, business administration, human behavior and industrial engineering to optimize work productivity. Integrated facility management by considering people, processes and places in the context of the organization, including an efficient environment, technology, safety, comfort and health.

The purpose of this research is to combine and integrate people, places, processes and technology. All of them are integrate existing organizational factors into a more effective, simplifying of complex processes, identifying and scheduling, notes, decision makers and more. This research was conducted in stages by design with a structured model stage for 3 (three) years (focus on humans, products and processes), research on facility management systems on human resources has been done on 2019. While the focus of research this year is to obtain an integrated facility management by product, and will continue in 2021 with a focus facility management by process. Which step by step research, an integrated and comprehensive facility management will be obtained

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Introduction

Facility management is the management of control of facilities and infrastructure based on conditions and workplaces in accordance with what is needed and can be used by all sections, for example for administrative management, logistics management, facilities and infrastructure management, maintenance and repair management to support effectiveness. Facility management integrates several disciplines, such as economics, business administration, human behavior and industrial engineering to optimize work productivity. Integrated facility management by considering people, processes and places in the context of the organization, including an efficient environment, technology, safety, comfort and health.

Based on the description above, facility management is developed to support the flow of workplace productive processes by adding value and reducing costs, various services, activities, responsibilities, skills, knowledge and management. All of them are integrate existing organizational factors into a more effective, simplifying of complex processes, identifying and scheduling, notes, decision makers and more. Scope of the future integration of facility management is also considered, account the current conditions of the organization and impact of future innovations and changes. Facility management is a computer system platform, designed to enable management facilities to implement a comprehensive maintenance management activities.

Literature Review

1.1 Life Cycle Development System

According to Raymond McLeod Jr system life cycle is a process of change that is followed by the application of the system or sub-system of computer-based information. This system life cycle consists of a series of tasks that follow the steps of the system approach. Because these tasks follow a regular and top-down way, this life cycle is often referred to as the waterfall approach to system development and use of the system. (Gaol, 2008).

1.2 Data Base Management System

Data Base Management System (DBMS) is a database system to store, modify, delete, and extract the data to / from the database, the query language called Structured Query Language (SQL), and database maintenance such as archiving and backup & recovery. A DBMS can store more than one database. Examples of DBMS are Oracle, SQL Server, MySQL and Microsoft Access. (Hartono, 2004).

1.3 Delphi

Delphi is the first programming language to break the boundaries between high level programming languages, Delphi programming language called procedural language means to follow a certain sequence. In making application commands, Delphi uses a visual programming environment. Delphi is the next generation of Turbo Pascal.

Delphi programming developer write and compile code within application developer or Integrated Development Environment (IDE). The IDE is an integrated display where you see separate but highly related menus and tools that are a unified whole in one coordination. Functioning as a control center starting from main menu, form, code editor and inspector which are used to design, write program code and manage the appearance of applications in various models. (Madcoms, 2003).

1.4 Human Resources Information System

Every company has a system for collecting and maintaining data that explains human resources, converts data to information and reports that information to users. This system is called Human Resource Information System (HRIS). (McLeod dan Scheel, 2008).

HRIS is a form of intersection between fields of human resource and information Technology. This system connects the human resources as a science discipline which mainly applied fields of information technology into the activities of human resource, like in planning and preparing data processing system in a series of steps standardized and summarized in application of enterprise resource planning enterprise resource planning. (McLeod dan Scheel, 2008).

Enterprise resource planning systems aim to integrate information into a single database system from different applications. The linkage of financial calculations and human resource modules through the same database is very important, which distinguishes it from other applications that have been made before, making this application more flexible but also better rules. (McLeod dan Scheel, 2008).

1.5 Facility Management

Jones and George (2012), management theory has evolved from the theory of scientific management in 1880 and 1890 through the development of five theories of management, administration, behavioral science and the theory of the organization's environmental management. In the last few decades, the integrated life cycle on assets built facility management as one of the fastest growing professions in the industry globally related to diverse needs and demands and the establishment of facilities management principles, with three essential elements (people, products and processes) as an integral element involved in the five management theory in terms of the scope of all general management issues.

International Facility Management Association (IFMA), an international association in charge of facility management defines as a job that includes a variety of disciplines to ensure functionality of the built environment by integrating people, place, processes and technology. From this definition, facility management be the coordination of the operation of the facility that is intended to make the whole organization more effective at what it does so that the operation runs smoothly. Facility management workplace leads to a more supportive flow of productive processes while adding value and reduce costs. The scope, services, activities, responsibilities, skills and knowledge of facility management are intended to integrate existing organizational factors. (PATANAPIRADEJ, 2006).

Research in developed countries such as United Kingdom, United States and Asia Pacific region have analyzed measure and composition of facility management and establish its relevance. Other studies in the United States and the United Kingdom have concentrated on determining the strategic role of facility management in business organizations as competency requirements, cost control and performance measurement. (Oladokun, 2011).

Concept of facility management adopted not only in practice, also inspire thinking on the management of three critical elements, as people, products and processes, to develop Facility Management Body of Knowledge (FMBOK).

Seen from the point of facility management profession, people are clients and facility management professionals and their organizations, products of various facilities management services and processes are various management measures to provide facility management services. A further review is focused on people, products and processes because it is carried out into the evolution of management theory to establish a general framework of management principles in facilities management.. (Chen, 2017).

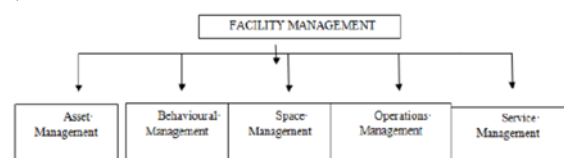


Figure 1. Facility Management System

Source: British Institute of FM dalam Oladokun 2011

Methodology

3.1 State of the Art

This research is expected to obtain designed a computer system platform to implement Integrated Facility Management as a comprehensive maintenance activity process, to support the flow of workplace productive processes by adding value and reducing costs, various services, activities, responsibilities, skills, knowledge and management. All of them are integrate existing organizational factors into a more effective, simplifying of complex processes, identifying and scheduling, notes, decision makers and more.

3.2 Research Roadmap

To provide an overview of this research and direction of next developments, a research roadmap was show in figure 2.

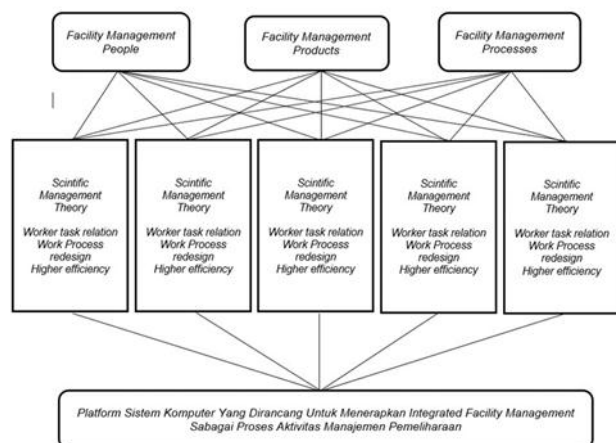


Figure 2. Research Roadmap

3.3 Methodology

First activity is build a computer system platform as designed by integration facility management to implement comprehensive maintenance management activities of facility management principles. Three important elements (people, products and processes) as a integration with key aspects are built gradually every year to develop the integration of people, places, processes and technology simultaneously.

1. Data Collection and System Development Identification.

To develop a computer system platform begins with the collection of data by interviews and literature study, given solutions and input on the benefits and conveniences.

2. Analysis and Formulate Model

Analyze problems to determine and determine by grouping the problems that have been identified, so that they can coordinate the interface between what people, places, processes and technology to effectively and efficiently.

3. Architecture System Design

Analysis results obtained, system design using architecture system design methods (structured design).

4. Coding

Coding based on the results of structured design to make modeling and database servers with table structures and attributes/fields or record stores to be use.

5. Testing and Evaluating Model

Test a program that has been written to ensure the programs are in accordance with the expected.

6. Implementation and Documentation

Documentation and archiving of computer system platform projects as integrated facility management. Research activities are carried out within a period of three years. Implementation of this study is explained in the research roadmap.

Results and Discussion

Based on the results collection data by interviews, analysis and formulate model, and design a structured system model that focuses on management system and product management that can be used as a basis for an integrated decision making process. This year, a mobile compatible system is obtained in the form of a product facility

management, while the following year's research will focus on the process facility management. Product facility management consists of:

- User data
- Unit data
- Brand data
- Product Type and Size Data
- Product data management
- Packing
- Delivery
- Ordering products
- Product Inventory List
- Sales
- Customer
- Payment
- Return
- Invoice Management
- List Delivery
- Purchase, Sales, Return and Ledger Report Management

System and product management has the following features:

1. User data
User List menu to display user data added, updated or deleted user data.
2. Unit data
Menu to add, update, or delete data and information related to suppliers, brands, units, types and sizes, product lists, supplier packing, shipping packing, and imported / ordering products.
3. Brand data
Brand menu is used to display, edit, delete brand data.
4. Product Type and Size Data
Used to add, edit and delete product type and size.
5. Product data management
Menu to add, update, or delete product data management.
6. Packing
Used to manage packing data. This page displays a list of packing suppliers, add and edit data.
7. Delivery
This page displays the shipping packing list, add, edit and delete shipping and delivery data.
8. Ordering products
Used for ordering products process and this page displays ordering products data.
9. Product Inventory List
Displays a list of product inventory list.
10. Sales
Used to display lists, add edits and delete sales data.
11. Customer
This page displays lists, add edits and delete customer data.
12. Payment
Used for the deposit process. customer payments, this page displays a list of deposits / balance payments from customers.
13. Return
Used to process product sales transactions.
14. Invoice Management

This page displays a list of invoices and print invoices.

15. Sales
Used to process product sales transactions.
16. List Delivery
Used to display the shipments list and print shipments.
17. Purchase, Sales, Return and Ledger Report Management

Used to display invoice data entered into the ledger / record; view the Purchase Periodic Report; Inventory Report; Sales report.

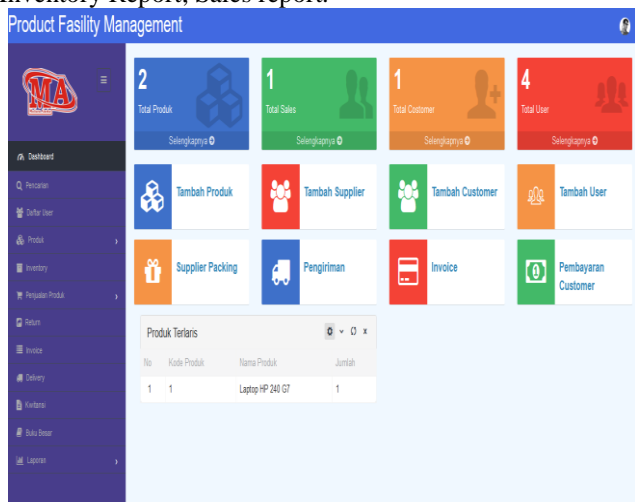


Figure 3. System Model of Product Facility Management

Conclusion

After designing a structured model system that focuses on integrated system and product management, the following conclusions are:

1. System and product management run effectively, minimize errors in and facilitate the search for existing data and records more quickly and accurately.
2. System and product management able to produce reports or administration according to wishes of the current user.
3. This system has been copyrighted registered in Ministry of Law and Human Rights of Republic Indonesia Number EC00202053544 and EC00202055820.

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