

Information systems of logistic management: a case study

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Abstract. Established in 2005, XYZ Cargo, a Freight Forwarding and an agency Company specialized in the logistic, shipping in Jakarta. Experience in both ocean freight and air freight agency which more than sixty branch of partnership around the world. XYZ Cargo has operated Information Systems (IS), IS make it possible for company to get the right output to the right people at the right time by increase the interaction between the company's people, the data collected in its various IT/IS systems. This paper primarily deals with the role of Logistics in Jakarta. Framework of thinking used systems development life cycle (SDLC) is a method by which the systems can be developed in a systematic manner and which will enhance the probability of completing the IS project within the time deadline and maintain the quality of the IS product as per the standard. Expected from the implementation of this information systems logistic management can achieve several objectives desired by user requirement, the IS to be more effective and efficient, provide convenience in terms of process data and information. Implementation of IS compared to the manual process of recording which facilitates decision-makers to be able to monitor transactions and report in a short time.

1. Introduction

In the global economy there is fierce rivalry to win customers and maintain them. A business company must provide better value in the areas of excellence, service, technological advanced, and total cost to maintain the customers pleased and earn their trust and company. Continuous advancement in all areas is needed to stay competitive and support the sustainability of the company [1]. Supply chain management (SCM) develop from a conventional focus on purchasing and shipping practiced between the mid-1960s and mid-1990s, to a comprehensive, more integrated attention on value creation in the recent millennium. Leading organizations more and more view supply chain quality as more than just a source of cost decrease – rather, they see it as a source of competitive benefit, with the potential to drive outcome improvement in client service, profit generation, property utilization, and cost subtraction [2]. Supply Chain Management (SCM) is more and more being legitimate as the integration of key company's processes across the network of organizations. In fact, one of the most necessary changes in the model of modern business administrator is that individual company no longer compete as only autonomous existence, but kind of as supply chains. SCM seeks to increase competitive performance by tightly integrating every functions within an organization and outboard stakeholders to be successful [3]. In respond to the improvement of global economy, manufacturing area strongly needs to establish, share and disseminate current and appropriate knowledge and output. For competitive return, many companies and organizations have now concentrate more on their supply chains and therefore thought of ways to improve their SCM. A supply chain is stays related by flows of output information, finance and material by the suppliers, producers, retailers, wholesaler and customers [4].



Information System (I.S) is basically concerned with data processing into some output of information. IS works in all system, which provides output for the managerial activities in a company. A system to change data from internal and external resources into information and deliver that information in an appropriate form, to managers at every levels in all functions to enable them to make timely and effective judgment, for planning direct and control the activities for which they are accountable [5]. Software and systems engineering are distinct from other forms of engineering as it deals with an inexplicit product, where the growth in construction is not decidedly visible and people or team members often rely on the documentation of others to attend and review progress [6]. By IT systems we mean the use of hardware and software solutions to improve the company's activities within and between organizations [7].

For companies, logistics assists to optimize the existing production and allocation processes based on the same resources by way of administrator techniques for promoting the efficiency and competitiveness of corporation. The key basis in a logistics chain is shipment system, which connection the separated activities [8]. Council of Supply Chain Management Professionals (CSCMP) most tightly associated with the logistics profession today establish logistics (management) as: that part of supply chain management (SCM) that programme, carry out, and controls the efficient, effective forward and turn over flow and storage of goods, services and related output of information between the point of source and the point of consumption in order to meet customers' demand [9]. The purpose of this research is to make logistic management software. The research procedure adopted in the preparation of this research is limited to step by step SDLC Waterfall with discussion on Use Cases Information Systems of Logistic Management which refers to the needs aspect of the user. Testing this information system based on aspects of functional test, performance test and user interface test.

2. Methods

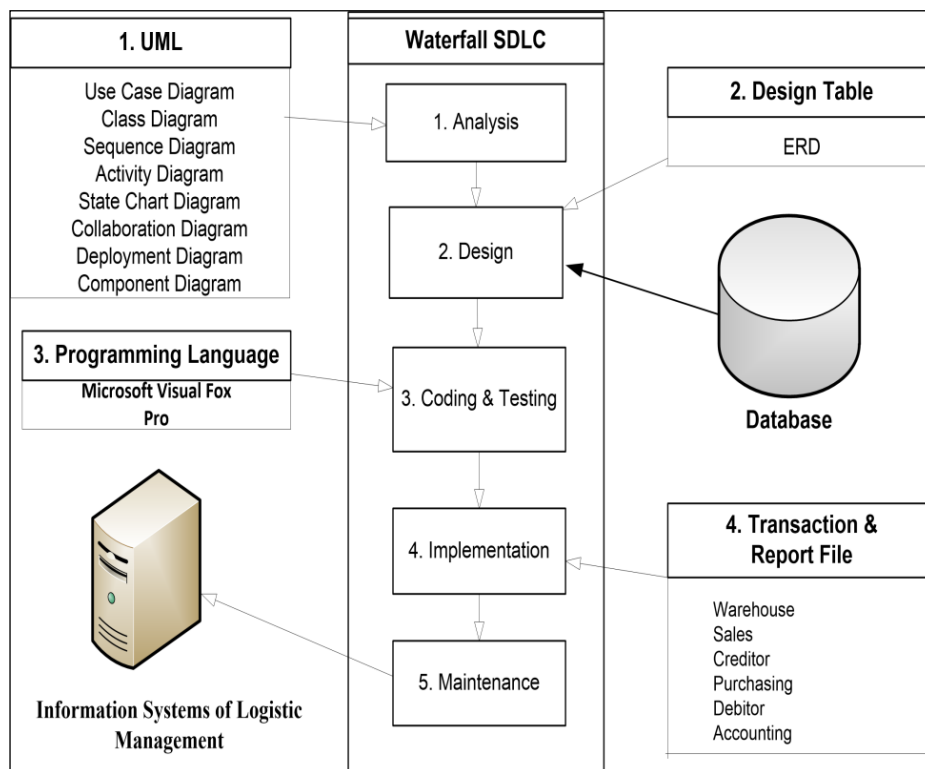


Figure 1. Procedure of Research.

Software development research is expected to help improve the practice of systems development, so research planning should make provisions for the improvement. Software development research

includes, but is not limited to, experimental study. [10], [11]. In this case framework of thinking used SDLC, Systems development life cycle is a method by which the systems can be developed in a systematic manner and which will increase the potential of completing the software project within the time deadline and maintain the quality of the systems product as per the basic. All systems projects go through the stage of requirements gathering, business or company analysis, design of systems, implementation of systems or software, quality assurance testing and maintenance [12]. Shown in Figure 1. Procedure of Research.

3. Results and Discussion

The development or construction of a new Information Systems of Logistic Management (ISLM) requires several stages, which have a connection on the activities. The activities include business or company analysis, design of systems, coding & testing, implementation of software and maintenance that sometimes referred to as stages. On the stages have elements that provide the framework for manage the project. Waterfall approach was SDLC first model to be used widely in software development to guarantee success of the project. In "The Waterfall" approach, the whole process of software development is divided into separate phases. Waterfall of SDLC model is a step by step software development process in which progress is regarded as flowing more and more downwards by way of a list of stages that must be executed in order to successfully construct a computer software or systems.

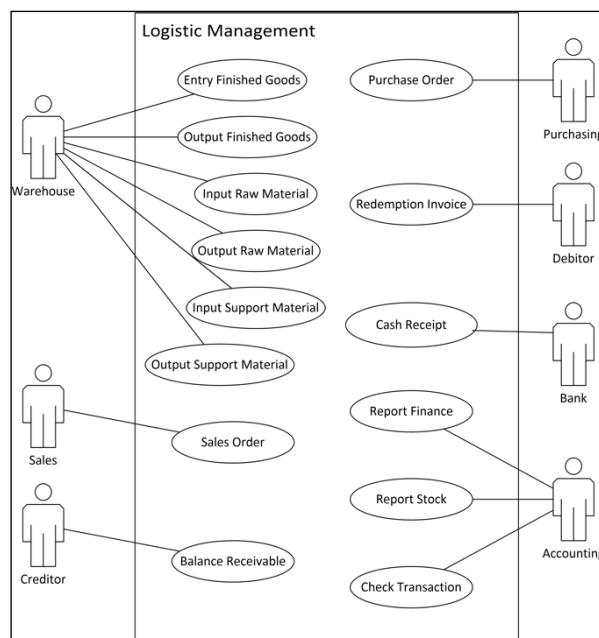


Figure 2. Use Cases Information Systems of Logistic Management.

Analysis stages are stage to understand and to keep in all the detail of business or company needs and the processing necessary of the new system or software. Equipment's and technique or method for analysis is Unified Modelling Language (UML). A. user requirement collects some useful information about the user's need to know and help design the application to be created. Such information may be in-demand functional requirements, problems and solutions that can be achieved from application design, and more. The output of this stage can be a Business Requirement Statement. Analysis, allows creating a description of the desired design logic of the application. Logical representations can be structured and object-oriented, where the structure means using Data Flow Diagrams, and object-oriented using UML. The researcher chooses the design of object so that the output of this stage is UML.

Shown in Fig. 2. Use Cases Information Systems of Logistic Management. Use Case part of diagram UML. The system consists of 7 actors. In this study we only represent use case diagram. Actors are Warehouse, Sales, Creditor, Purchasing, Debtor, Bank and Accounting. Use cases for Actor Warehouse are entry & output finished goods, input & output raw material and input & output support material. Use case for Actor sales is sales order. Use case for Actor creditor is balance receivable. Use case for Actor Purchasing is purchase order. Use case for Actor Debtor is redemption invoice. Use case for Actor bank is cash receipt. Use cases for Actors Accounting are report finance, report stock and check transaction.

Design, explains how we create an overview of the design of the created application. The description can be User Interface and the design of the database to be used in the application. The outputs performed by researchers at this stage are the design systems of the user interface and the design of the database design. In this case author can't explore entity relationship diagram, because totally 98 entity and limited pages for this paper. The interface design cannot be displayed entirely from the image, due to the limited page of the paper being submitted.

Programming or coding stage are receiving the design of the system documents, the work done or finished is divided in to modules/units and actual programming or coding is begun. In this study, coding or programming language with Microsoft Visual Fox Pro. Visual Fox Pro have as one's base as a member of the class of languages as usual referred to as "xBase" languages, which have syntax based on the dBase programming or coding language. Ms. Visual FoxPro database construction system is a powerful tool for quickly inventing high-performance desktop, rich or thin client, distributed client, client/server, and Web database applications or software. Employ its capable data engine to manage large or big volumes of data, its object-oriented programming to recycle section across applications, its eXtensible Markup Language (XML) Web services features for distributed applications or systems, and its built-in XML assist to quickly manipulate data.

Table 1. User Acceptance Testing of Module login.

Modul Login				
Use case/ Test case	Test Step	Expected Result	Actual Result	
Login as super admin	1. Access Logistic application 2. Type id "RIRIN" as username and "LUPA" as password at login form 3. Click button "OK"	User can login as super admin and direct to year period page.	Tester can login as super admin and direct to year period.	
Login without enter id and/or password	1. Access SCM application 2. Type "RIRIN" as username without enter password at login form 3. Click button "OK"	User can't login and pop up error message box.	Tester can't login and error message box appear "Sorry, you're not yet registered".	
Login with fault id and/or password	1. Access application 2. Type id "RIRIN" as username and "FAULT" as password at login form 3. Click button "OK"	User can't login and pop up error message box.	Tester can't login and application closed.	
Logout from super admin page menu	1. Access application 2. Type id "RIRIN" as username and "FAULT" as password at login form	There's confirmation message box pop up before user logout from application.	There's no confirmation message box pop up before user logout from application.	
	3. Click button "OK" 4. Input year period "2016" 5. Enter super admin page 6. Click button "Exit"	User success logout from main page and direct to login form page.	Tester success logout from application and application closed.	

Stages of User Acceptance Testing: After the programming or coding is developed it is tested against the requirements to make sure that the systems is actually solved the needs addressed and put together it during the requirements stages. User acceptance testing is the process of running or implementing a

program or systems with the main purpose to find errors or bugs. Shown in Table 1. User Acceptance Testing of Module login, because of the limitations of the page for the overall breakdown of the process from logistic application, then only show the login module.

During this stages, every types of functional testing like unit testing, integration testing, system testing, user acceptance testing (UAT) is done as well as non-functional testing are also finished. Black-box testing, also called behavioural testing, focuses on the functional need of the software or systems.

No. Ref	Tanggal	Port of Loading	Customer	Sales
JKEL-4012009-01	16-12-2014	TG.PERIOK JAKARTA	ABC01	RIRIN
JKIL-4012012-01	- -	BEIJING		
JKIU-4012012-01	- -	SUKARNO HATTA	ACA01	

Figure 3. Print Screen Information Systems of Logistic Management

As the implementation stages begins, foremost on people's minds is development of the new system. A major part of building the system or software is writing programs. Actually, some people mistakenly believe that programming or coding is the focal point of systems constructions. We hope you agree that doing a right, thorough job on the analysis of company and design systems stages is essential to a smooth and successful implementation stages. The next step, maintenance stages: It is the process of modifying a systems or software solution since delivery and deployment to screen output, correct errors or mistake, and improve outcome and excellence. In more detail, the overall ISLM can be shown graphically, as depicted in Figure 3. Print Screen Information Systems of Logistic Management.

4. Conclusion

Information System Logistic Management (ISLM) is a valuable technology that company use to evaluate the efficiency of their company's operations as well as performance of their staffs. ISLM make it possible for company to get the right of output information to the right staffs at the right time by increase the interaction between the company staffs, the data collected in its various IS systems. Implementation of information system Logistic Management (ISLM) in the observed company was achieved in the subsequent: (a) Monitoring and evaluation of scheduled delivery of the goods, the fulfilment of the supply chain can be met and to support the overall business process in real time monitoring (b) Decrease of the data acquisition tabulation time and order prepare automation (c) Increasing the excellence of information and (d) Reducing the number of staffs who work on data tabulation, not only in logistic processes, but also in other processes while increasing number the time available.

The limitation of Information Systems of Logistic Management are (a) Every or all the important as well as the secret data are there stored in an ISLM and which is not supposed to seen by anybody outside the company or anyone who is not authorized or certified to do so, and (b) In some cases for this study, it has been seen that the account of staffs are active in ISLM site even after they got out from there (out of office), sometimes, these accounts or statement can be used for some negative view.

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