



# Analysis of System Development Priority Needs Based on Service Level Agreement

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## ABSTRACT

Freight is a routine activity done by logistics company. The number of transportation requests between cities leads the company to deliver real time delivery and accurate delivery. The process of Monitoring goods delivery is not an easy task as there are many aspects that affect it, so this can cause problems and conflict of delivery and acceptance. Items missing at the time of shipment, the reporting system is still done manually resulting in the findings of the Audit are some problems in shipping the goods. Therefore, we propose a system that is able to provide solutions to help the company in monitoring the delivery of goods that can allow the user to obtain information about the status of goods delivered as a means of Monitoring delivery of goods and related decisions in support of service level agreements in the delivery process.

**Key words :** Monitoring, Delivery Monitoring, Delivery, Service Level Agreement, SLA.

## 1. INTRODUCTION

Technology cannot be separated from people's lives. In addition, technology has created a higher level of competition between companies, requiring management to obtain useful information for the company's business development accurately, quickly, and accurately. With the information technology it can make it easy to get the right information and quality [1].

The use of computers in the company has a very important role, because on this day and age many companies have used computers for operational activities. In addition to keeping the company's data information, computer utilization also has many benefits, namely the work will be completed faster, more effective, efficient, moreover the data generated by the computer will be more accurate than the manual process and if there is an error, we can easily identify it.

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Based on the above problems, we need an analysis that can map business processes, needs and problems in this activity. Freight forwarding companies need tools or medium for information and capacity to evaluate their performance in providing information. Based on previous research, that currently requires tools to contain the latest shipping information in Freight delivery [1], it is used to minimize the loss of shipping documents or goods [4] and makes it easier for users to get information about the status of goods that have been sent [5].

## 2. LITERATURE REVIEW

### 2.1 Service level Agreement

A Service Level Agreement (SLA) is a form of business agreement between a customer and an IT provider. An SLA is a part of a service agreement between the two entities to improve performance. SLA is used to determine the ideal target, as minimum acceptable services [6]. The SLA is required by two parties concerned, namely the sender of goods and receivers. In general, both sides have different expectations. The recipient expects the product to be shipped quickly, but otherwise the sender takes a long time to process the supply of the goods. Because of these differences in expectations, communication is necessary so that conflicts do not occur against these differences.

The use of SLA, which has been widely known in information technology services, can also be used for other services. With SLA, the service has a clear measure of success in terms of quality, quantity or end time [7]. The measure of service success is the agreement of the parties involved that has accommodated the recipient's expectations of service providers and capabilities. SLAs can also be used to facilitate coordination and communication between the parties involved and maintain the consistency of output or services provided to the company.

In measuring the success of a services, SLAs can be used to measure the performance of units or employees that provide services. SLA can be used as a measure of performance action so that fulfillment will be better maintained. With this, the employees or units involved will pay attention and work to meet the SLA targets and this can encourage employee productivity. In addition, SLA management can be one of the references to improve the company's service processes to be even better. Good service performance will have a positive impact on the achievement of company targets.

SLA is needed to connect between differences in expectations, defining the authority and responsibilities of each party as well as being a measure of the effectiveness of the supply of goods from the sender. Determination of SLA should be able to involve all parties involved in an organization, in order to obtain mutual agreement. The following are the stages of making SLA.

1. Determine the parties involved, because the SLA is an agreement between the two parties
2. Determine the recipient's expectations of goods and their conditions
3. Mapping the process and activities in providing and delivering the goods.
4. Measure the time taken to deliver the item.
5. Provide estimates to get an agreement on the time of completion and delivery of goods.

## 2.2 Decision Support System

The decision making process in a Decision Support System (DSS) uses a computer as a supporting tool [8]. The following are the stages in the decision support system including the process of identifying problems, selecting relevant data, and determining the approach used in the decision making process, and the evaluation process for selecting alternatives [9][10][11].

There are two main components in decision support systems, namely data and models, where data and models are used to solve unstructured problems. Decision support systems can help the decision making process in an organization, where the system will provide advice on decision making. However, humans still hold control of the decision making process [12].

## 2.3 Metode Agile

Agile Method is a short-term system development that requires rapid adaptation from the developer to changes in any form. Software development using the Agile method requires innovation and good responsibility between the development team and the client in order to produce high quality software [13]. Software development methodologies are used to structure, plan, and control the progress of a project, while the software development process is the models and methodologies used to develop a software.

## 3. RESEARCH METHOD

The methodology used in developing this system is the Agile methodology. Agile Method is a collection of values, principles and practices for modeling software so that it can be applied to software development projects effectively [14].a



**Figure 1:** Agile Development Model

Following are the steps used for the development of this system.

1. *Requirement*  
At this stage the developer communicates with the user to understand the desired software.
2. *Plan*  
At this stage developers and clients make plans about the needs of the software to be made.
3. *Design*  
System Design can assist in determining the hardware specifications and system requirements needed, and also helps in the process of defining the overall system architecture.
4. *Develop*  
At this stage the design that has been made will be refined into a final design that is intact and comprehensive. Every aspect of design must be considered in detail because it will be used at the system development stage.
5. *Release*  
This stage is the process by which the programmer encodes the software.

6. Track & Monitoring

At this stage, the unit is developed and tested. After testing each unit, all developed units will be integrated into the system. After that, the system will be tested to check for errors in the developed system. The system that has been developed will be run and maintained. The process of repairing errors not found in the previous step, repairing the implementation of the system unit and upgrading the system as new requirements are included in Maintenance.

4. RESULT AND DISCUSSION

Here is a Use Case Diagram (Figure 2) of the system design.

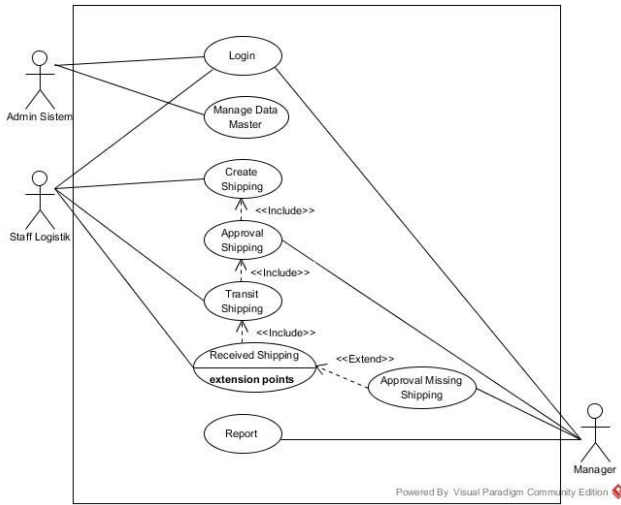


Figure 2: Use Case Diagram

Before accessing the system, the user must first log in. Users in the system built are divided into 3, namely: Admin, Logistics Staff, and Manager. Each user has different roles in the system.

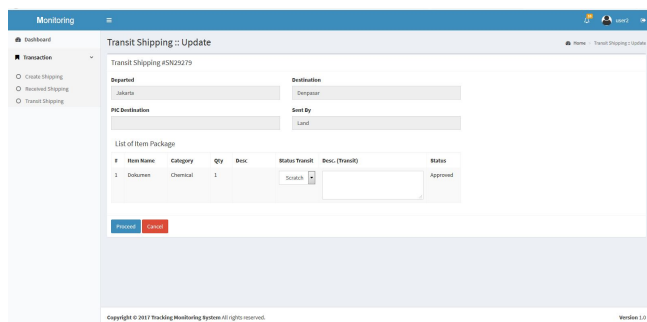


Figure 3: Transit Shipping

This page is used by logistics staff users to carry out the process of transit shipping or shipping from a shipping location that has been adjusted to the transit location during the shipping process by the logistics staff. Users in transit locations, only fill in the status of items during the transit process and transit information is done per item transit, then press the "Proceed" button.

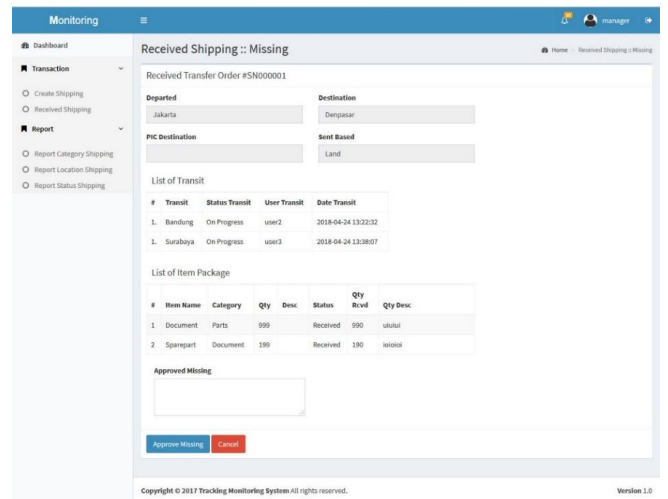


Figure 4: Received Shipping

The Received Shipping (Figure 4) page is used by logistic staff to process the receiving of shipping or delivery from a delivery location that has been adjusted to the location of the receipt during the delivery process by the logistics staff. Users at the receiving location, only fill in the number of items received and the receipt information per item.

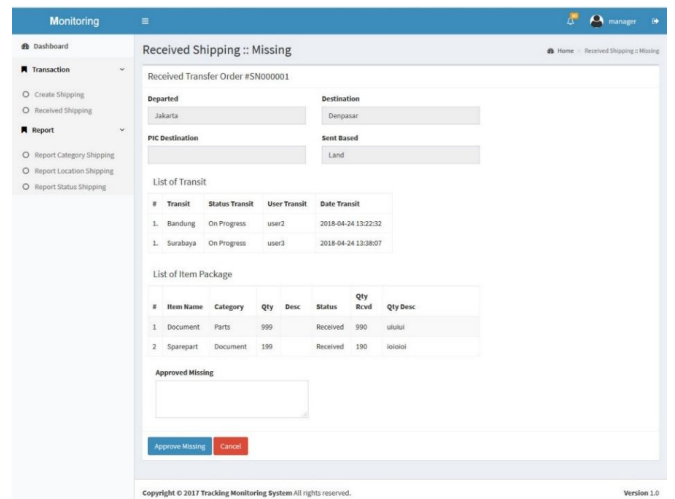
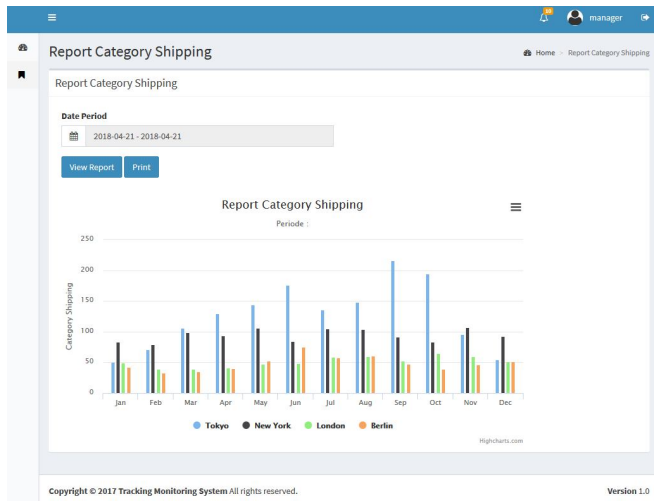


Figure 5: Approval Received Missing

The Approval Received Missing (Figure 5) page is used by managers to approve acceptance transactions with the number of receipts that do not match those made by the logistics staff, by including information related to the number of items that are different during the reception process at the destination.



**Figure 6:** Report

The Report (Figure 6) page is used by managers to view reports based on shipments made by logistics staff. The output of each report has several views such as charts, tables and can be printed in PDF format.

## 5. CONCLUSION

Based on the development of the system that has been done, that the application developed can assist staff in the process of monitoring the shipment of goods until the goods are received by the recipient. This application can also minimize the risk of loss of goods, because the existence of the goods can be known by inputting the shipping number in the system. In addition, the development of this application can also help reporting because every time recording transactions, logistics staff do not need to record transactions manually on the book. By opening the report page, the desired report can be retrieved in pdf or excel format.

## ACKNOWLEDGEMENT

Thank you to Universitas Mercu Buana, especially Puslit Universitas Mercu Buana for helping with facilities, infrastructure and funding in the research process conducted

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