

Solution for the Delay in CMR (Change Management Requirement) Process

Gunawardena MDDR ¹
Bogoda HMAK ²
Arudchelvam T ³

ABSTRACT

The research study was carried out as the final year project for the industrial training in course module INDT421X as partial fulfillment of the B. Sc. (Joint Major) degree program. This research was conducted in the well reputed telecommunication company in Sri Lanka Located at Colombo area. In this company one of the major problems was delay in their CMR (Change Management Requirement) document flow process. In that research the CMR document flow process was analyzed, where the delay may occur was found, finding the reasons for the delay was identified and solutions for the problem was suggested.

INTRODUCTION

The selected company is a rapidly increasing mobile network in Sri Lanka and also one of the leading telecommunication networks in the world owned & operated by a Multinational Company which provides their service to Asia, Africa & Latin America. The selected company commenced operations in 1980s. The company was incorporated as a limited liability company under the Companies Act Of 1988, and obtained a license to operate as a cellular telephone service provider under the Telecommunication Regulatory Commission of Sri Lanka.

In Sri Lanka, company introduced the per second billing system for telecommunication services. it has successfully focused its strategy on prepay, resulting a customer base of over 2,000,000 in both forms today. Prepay is the largest segment in the mobile market with the highest growth rate. Even today thousands of subscribers are adding per month that shows the success of company in Sri Lanka. It's provides GPRS, MMS, News Alerts and entertainment facilities for the subscribers. In the company if a person needs to change something or introduce a new system for the betterment of the company, he needs to get the prior approval from the company. When he applies for the approval he needs to give following details.

1. What is to be introduced (it can be a new system or a change in the system)
2. What is the betterment of the change?
3. What is the rollback procedure if it fails?
4. Details of the pre setup
5. Details of the post setup

To carry out this process, he needs to fill CMR form. CMR form is a form which is to be filled to get the prior approval before introducing any change or any new system. Sometimes this procedure may take 2 to 3 days but at present the procedure that they follow and the document flow that they handle are not in order. Therefore, sometimes, it may take 6 to 8 months to get the prior approval. Because of this delay and mishandling some requests are closed.

LITERATURE

Global System for Mobile Communication (GSM)

Cellular is one of the fastest growing and most demanding telecommunications applications. Today it represents a continuously increasing percentage of all new telephone subscriptions around the world. The concept of cellular service is the use of low-power transmitters where frequencies can be reused within a geographical area. The idea of cell-based mobile radio service was formulated in the United States at Bell Labs in the early 1970s. However, the Nordic countries were the first to introduce cellular services for commercial use with the introduction of the Nordic Mobile Telephone (NMT) in 1981.

Base Transceiver Station (BTS)

A base transceiver station (BTS) is a piece of equipment that facilitates wireless communication between user equipment (UE) and a network. UEs are devices like mobile phones (handsets), WLL phones, computers with wireless internet connectivity etc. The network can be that of any of the wireless communication technologies like GSM, CDMA, , WiFi, WiMAX etc.

¹ Graduate, Department of computing & Information System, Faculty of Applied Sciences, Wayamba University of Sri Lanka.

² Lecturer, department of Computing & Information System, faculty of Applied Sciences, Wayamba University of Sri Lanka.

³ Lecturer, department of Computing & Information System, faculty of Applied Sciences, Wayamba University of Sri Lanka

Transceiver (TRE) Module

This is the signal processing part of the BTS. The TRE that is usually used can cover GSM 900, GSM 1800 and GSM 1900 bands.

Antenna Network Combiner (ANC) module

The ANC provides the intermediate RF stage between the TREs and the antenna.

Its tasks are:

- To combine the output signals of up to 4 transmitters and to connect them to up to 3 antennas
- To feed the received signals from the antenna to the radio front end, where the signals are amplified and distributed to up to 8 receivers.
- To allow simultaneous transmission and receiving an antennas (duplexer)
- To provide filtering for the TX -& RX -path.
- To supervise the VSWR of the antennas.

Microwave Antennas

The microwave antennas are used to communicate between BTSs and BSCs via microwave frequencies.

CMR using purposes

1. Create a new GSM Base Transceiver Station (BTS)
2. Add new Transceiver (TRE) Module
3. Add new Antenna Network Combiner (ANC) Module
4. Add new Microwave Antenna
5. Swap GSM Base Transceiver Station (BTS)
6. Replace Transceiver (TRE) Module
7. Replace Antenna Network Combiner (ANC) Module
8. Replace Microwave Antenna



Figure 1: Document flow diagram of the CMR process

METHODOLOGY

Data collection Strategy with a Rational

In this research, the researcher used both primary data collection and secondary data collection methods.

To identify process flow of the CMR documentation flow, the researcher used interviewing method. To identify the process flow of the CMR, researcher used both managers of the two departments. To identify the knowledge of the CMR process, researcher gave questionnaire for 35 employees. That questionnaire consists of 3 major parts and has about 5 questions. It has multiple choices as well as to type-in answers where necessary. The multiple choices are to be analyzed graphically about the situation. Type-in questions are to find out users' opinions and any user specific details. A part of the questionnaire could be avoided by users depending on their knowledge about the subject. The following table 1 shows the summary of the questionnaire.

Major part	No of Questions	Description
Knowledge of CMR process	3	This find out whether employees know the CMR process and its benefits.
About current situation of CMR process	1	This finds out employee's feelings of current CMR process. whether it works or not
suggestion for improvement of CMR process	1	Find out alternatives of the problem

Table 1: Summary of the questionnaire

Details of Design and Development of Data collection Tools/Instruments

For the research, the researcher used CMR forms in the past two years of two departments. To collect the data the researcher prepared a data sheet to get the relevant data.

To analyze the data researcher used graphical method.

DATA COLLECTION & ANALYZING

Using the questionnaire method the researcher obtained the data and following figures show the summary of the answers for the issued questionnaires.

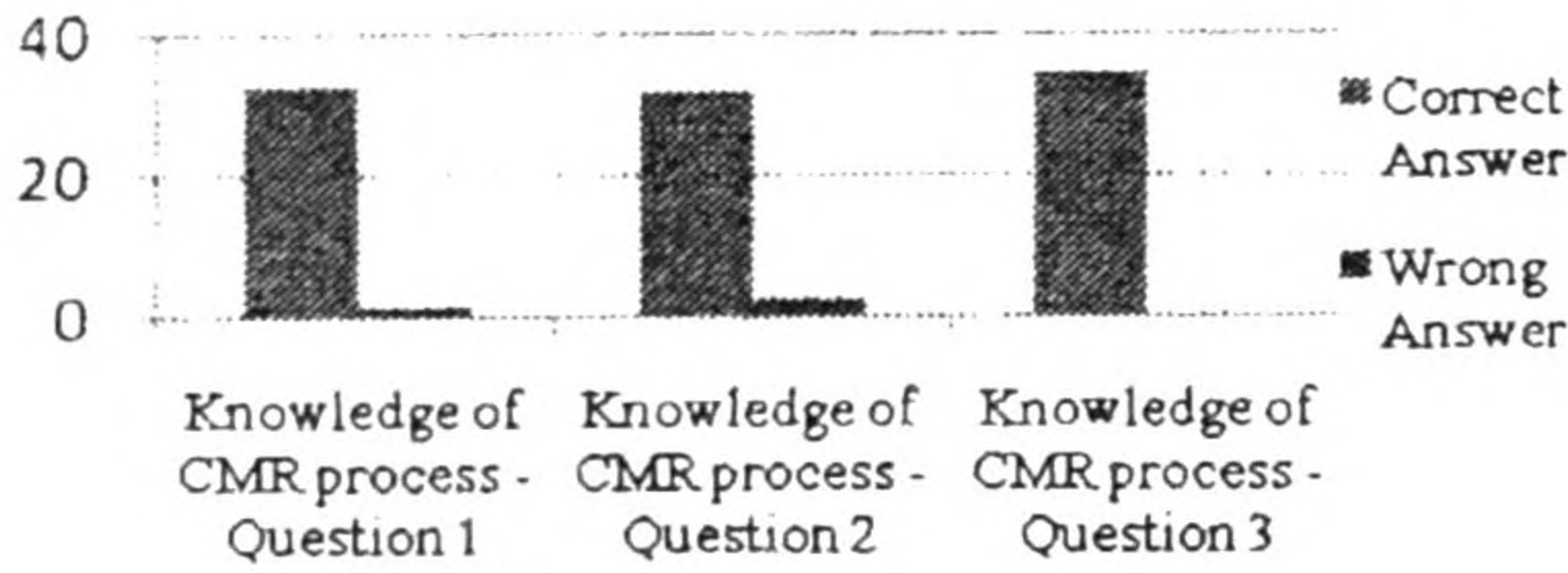


Figure 2: Knowledge Base question answers

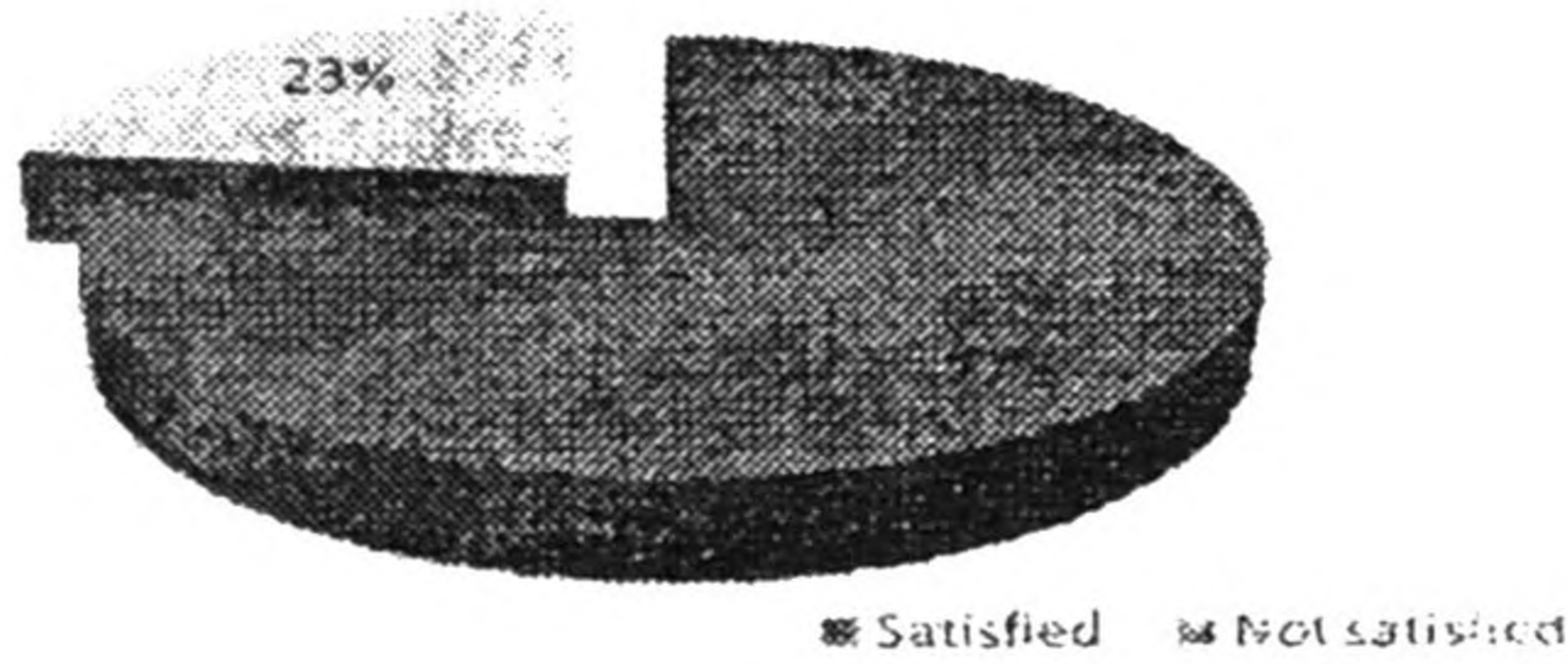


Figure 3: About current situation of CMR process employee's feedback

For the research, the researcher used CMR forms in the past two years from two departments. To collect the data the researcher prepared a data sheet to get the relevant data.

Therefore researcher identified that one or more of the following situations could cause a delay of the CMR document flow:

1. Delay in Approval of Head of Department
2. Delay in Approval of CEO
3. Delay in Approval of Head of Department (After Implementing)
4. Delay in Approval of CEO (After Implementing)

According to the situations researcher collected the relevant data through CMR documents and found the time periods and summarized the data. Then using those data the graphs were drawn for each situation.

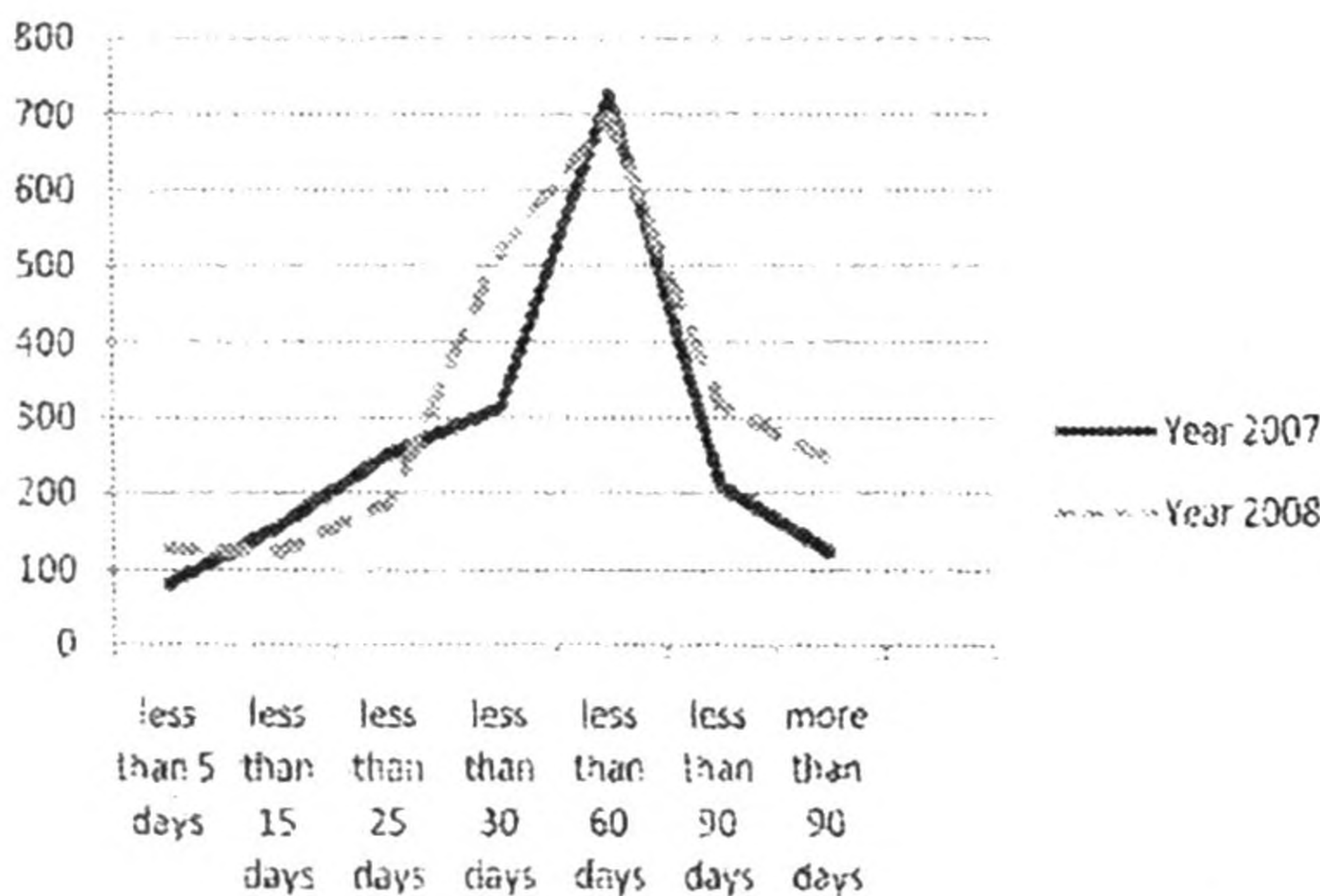


Figure 4: Delay in approval of head of department

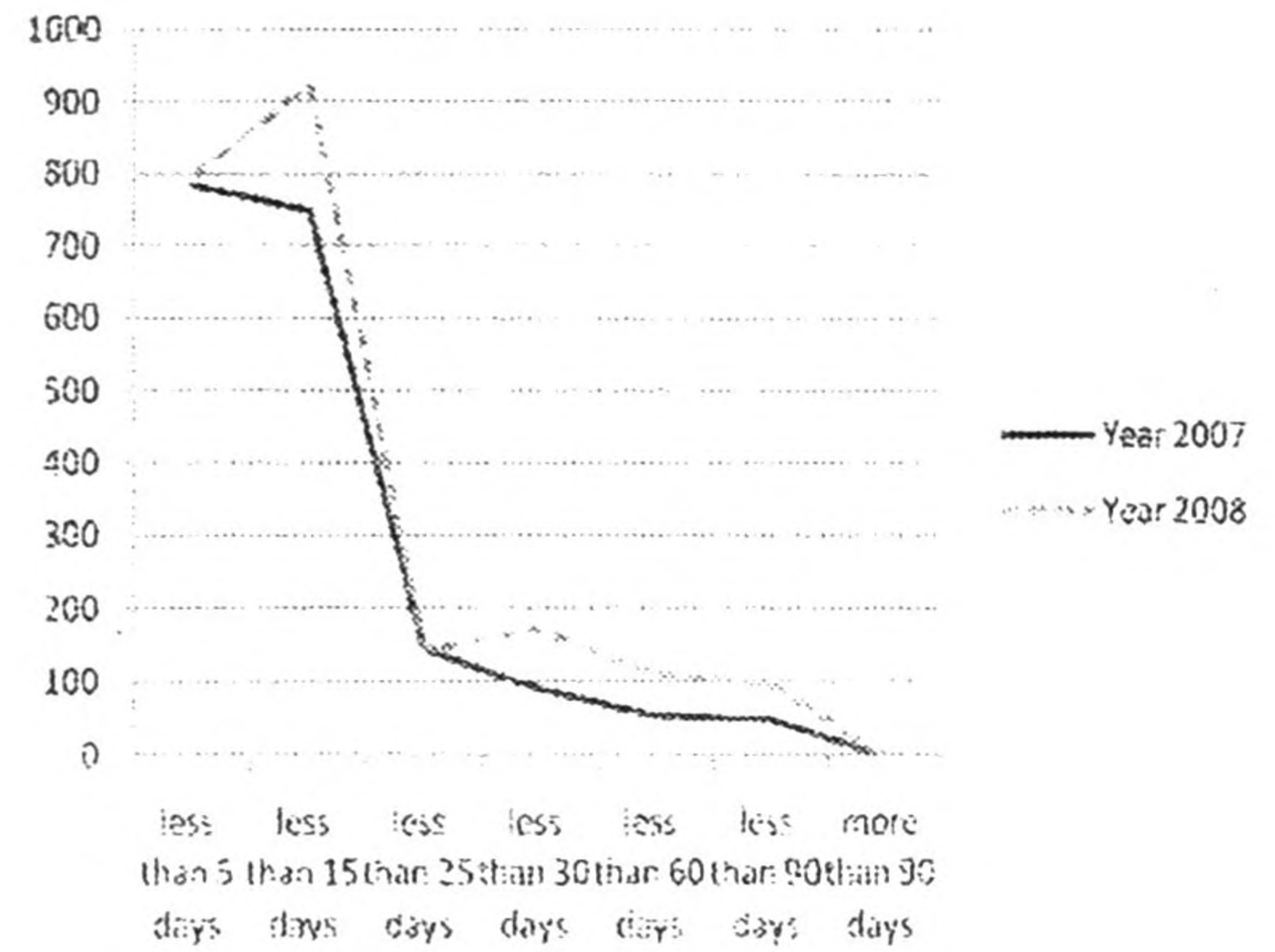


Figure 5: Delay in approval of CEO

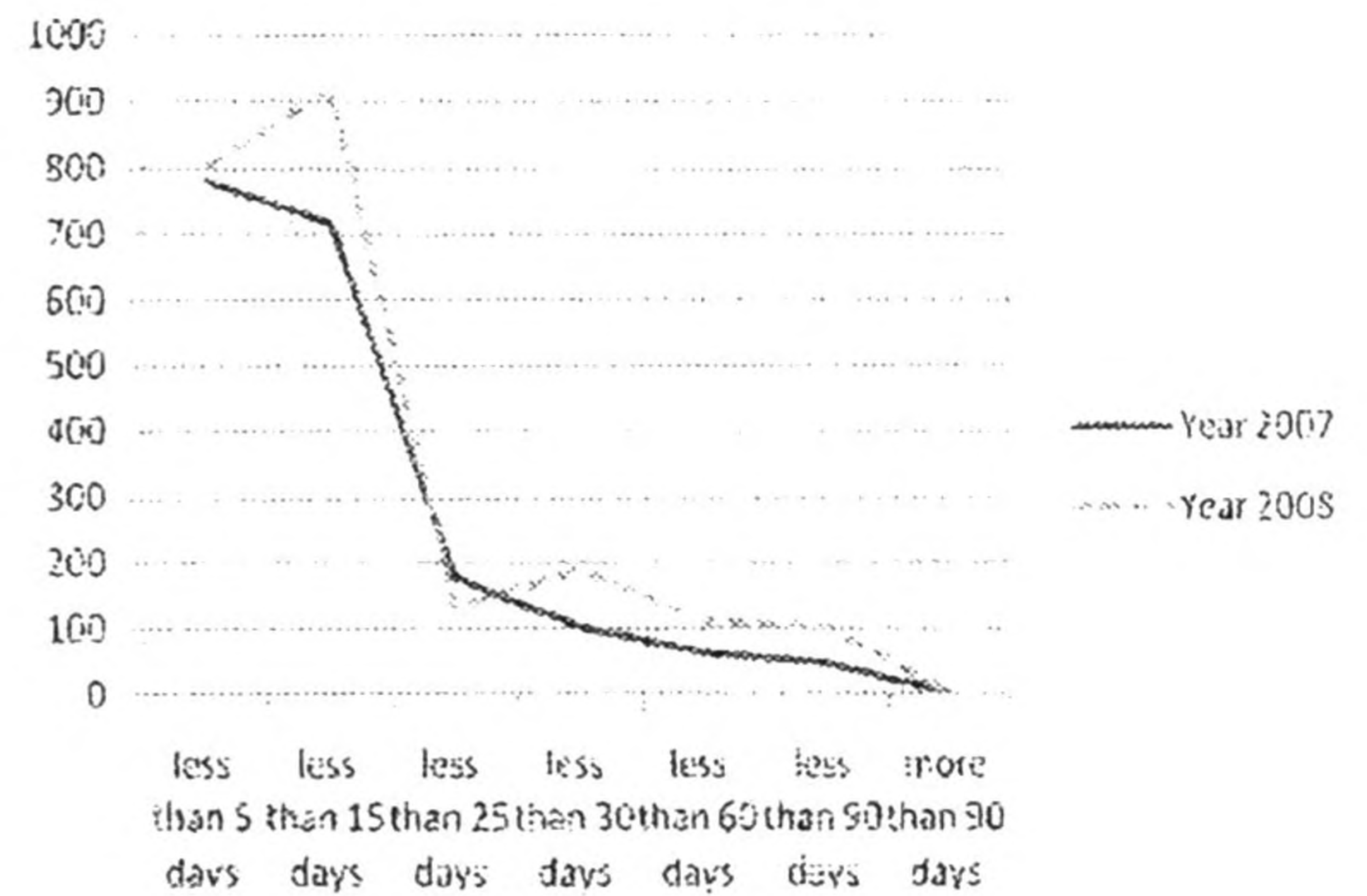


Figure 6: Delay in approval of head of department (After implementing)

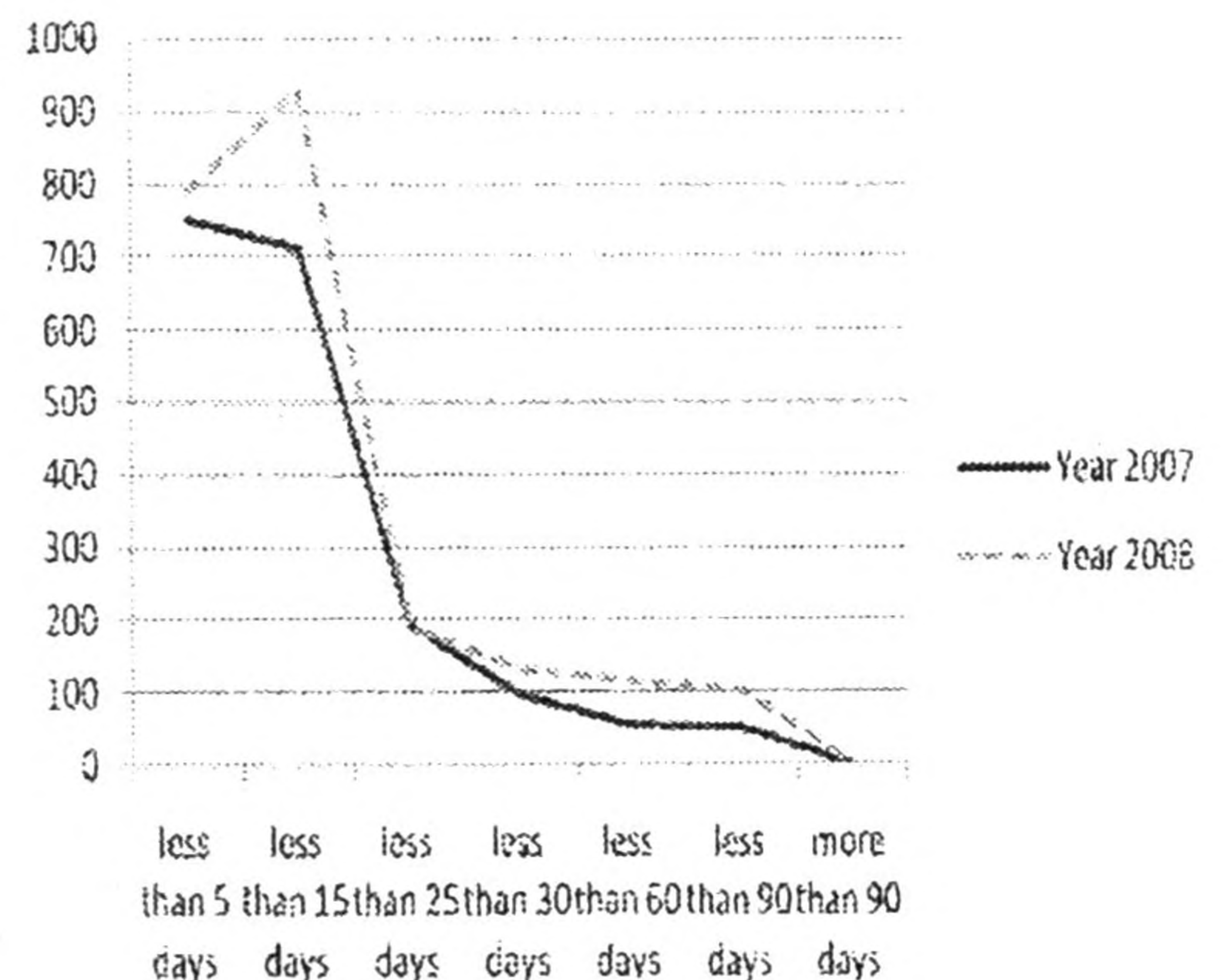


Figure 7: Delay in approval of CEO (After implementing)

SOLUTION FOR THE DELAY IN CMR (CHANGE MANAGEMENT REQUIREMENT) PROCESS

According to the above figures, in figure 4, figure 5 & figure 6, peak values are in more than 5 days and less than 15 days region. But in figure 3 the peak value is more than 25 days and less than 60 days.

RESULT AND DISCUSSION

According to the graphs figure 4, figure 5 and figure 6, peak values are in a considerable time period in getting the approval. But in figure 3 peak value is a considerable time period and it affects for the delay. According to the research that delay occurs in CMR creation and does not reach the head of the department.

List of Alternative Solutions

- Motivate the employees to create CMR, and move it to the Head of department.
- The company has web based system to handle the day to day activities. The system must be modified to include the CMR process and when the CMR is filled it automatically goes to the head of the department.
- Change the CMR process and introduce the new easy system to the company.

Comparative Analysis and Feasibility Study of Alternative Solution

- Introducing the new process is more costly. Because if the company uses the new system, company needs to train their employees. Also employees are more familiar to the old system and there will be a resistance to adapt to the new system.
- Introducing CMR process to their web based system is more useful because that system is known by the employees and they have worked with this system for years. Then CMR process is added to the system, employees can adapt to that in less training period.
- Motivation is also a good solution because it gives some benefit to the employees to do their activities properly.

According to the researcher's view the CMR process adapted to their web based system is more cost effective and an efficient one. Because that system also was developed as an in-house project.

Limitations of this Research/Study

- This research has been done only in 2 departments. Therefore other departments can have some different problems and different causes.
- Used only 35 employees from those departments because from the existing 75 employees some employees work in the field not in the office.
- In the secondary data sometimes errors could be occurred and someone can alter those records.

- Sometimes that data can be misplaced and then that data might not be represented.
- The researcher could not get the audit reports to get more accurate causes of the delay.

In the problem of the delay of the CMR process, the researcher identified that the cause for the problem is in the creation of the document and delaying to get the approval of the head of the department. It is the main cause and recommendations are added to their web based system. It is easier and more cost effective than introducing a new system.

CONCLUSION

To reduce the delay of the CMR process, the company is recommended to change the way of passing the document so that it is visible to the others to identify where the document currently is. Therefore we want to add that CMR process to their web based system.

REFERENCE

- Alcatel manuals.
- Sigmund M. Real , Matthias K. Weber, Malcom W. Oliphant, (1995). *An introduction to GSM*, Artech House.
- <http://www.gsmworld.com/technology/gsm/index.htm>,