CHAPTER I INTRODUCTION

I.1 Background

In order to improve the gross university enrollment level, the government made a new breakthrough that allows colleges, besides Universitas Terbuka, to hold Long Distance Learning (LDL) to meet certain criteria and requirements (Ministry of Education Regulation No. 24, 2012). The function of LDL is as a form of education for students that could not go to class without reducing the quality of the concerned students (Ministry of Education Regulation, 2012).

Long distance learning is a system which is very suitable to be applied in Indonesia because Indonesia is a country that is quite extensive and consists of thousands of islands. Indonesia's geographical situation is one factor of education inequality in Indonesia for it is difficult to obtain in remote places in Indonesia. With LDL, people in Indonesia can implement quality education without having to leave family, home, and work wherever they are (Ministry of Education, 2001).

Currently there are only 6 out of 3,207 universities in Indonesia (Ministry of Higher Education and Research, 2016) which has been running LDL program; Universitas Terbuka (UT), Bina Nusantara (Binus), University of Indonesia (UI), Gadjah Mada University (UGM), Surabaya Institute of Technology (ITS), and Bandung Institute of Technology (ITB) (Ministry of Higher Education and Research, 2015). Because there are still a few number of universities in Indonesia which has the LDL program, this is a great opportunity for Tel-U to run similar programs.

Telkom University is one of the the private universities that provide LDL programs for postgraduate students. However, the practice of LDL run by Telkom University Graduate School is still not fully optimized because of constraints such as teaching staff, the material provided, and the limitations of the technology used (Graduate School Student Data Telkom University, 2014). Telkom University graduate school has three majors that each have LDL programs, which are Magister of Electrical–

Telecommunications Engineering (MTE), Magister of Management (MM), and Magister of Informatics Engineering (MIF) (Telkom Graduate School Handbook, 2014).

Magister of Informatics Engineering (MIF) Tel-U is the major in Tel-U graduate school that has a low interest. Currently, the MIF has 89 students who are still active in the academic year 2015/2016 and consists of 2013-2015 batches. From 89 students, 39 of whom are LDL students, while the target MIF students for each semester if 60 people.

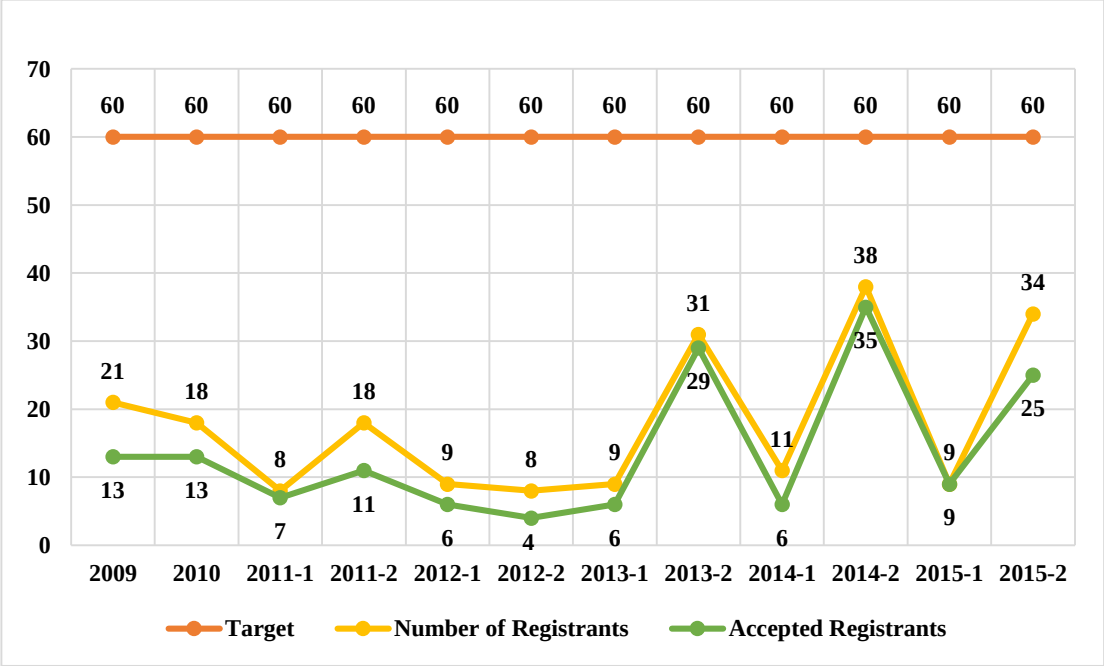

Figure I. 1 Comparison of Target, Number of Registrants and Accepted Students (Source: Tel-U Magister of Information Technology Data, 2015)

Figure I.1 shows the ratio of accepted students and the target set by MIF. The Figure above shows that since 2009 the number of MIF students in Tel-U are still very far from the target set. Number of students could not reach the target due to the number of applicants with little or no applicants who cannot qualify for admission of LDL MIF Tel-U. In order to find the roots of this problem, its conducted why-why analysis as shown in figure I.2.

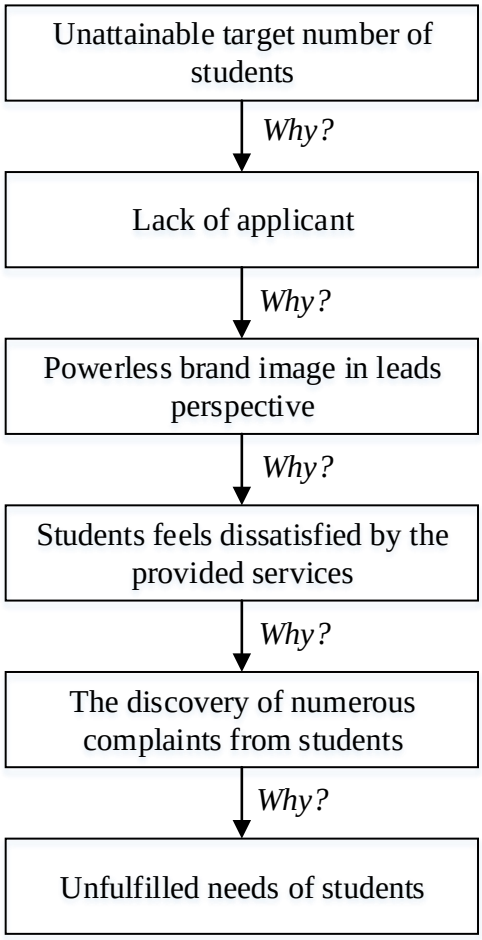

Figure I. 2 Root Cause Identification of LDL MIF Tel-U

Based on figure I.2 above, the main cause of student targets not achieved is due to the student needs are not being met, giving rise to many complaints due to customer disexpectation to LDL MIF Tel-U, thus affecting the number of applicants each year which are not increasing. To overcome this problem, quality improvement of LDL MIF Tel-U should be done immediately. In addition to the number of applicant's problem, LDL MIF Tel-U also has a more qualified competitor that has stood longer, which is Magister of Information Technology (MTI) BINUS Online Learning.

Magister of Informatics Technology (MTI) BINUS Online Learning program has been established since 2008 and focus on the remote lecture system (Official Site of Bina Nusantara, 2015). Remote lecture system that offered a better structured range of

instructional materials, software used, teaching team, and also the infrastructure, so that it becomes more attractive for people that interested to LDL program (BINUS Online Learning Management, 2015). Tel-U can make BINUS as a reference for lecture quality improvement. By improving the quality, LDL MIF Tel-U can be a better program than MTI BINUS Online Learning.

Besides having a strong competitor, other obstacle that experienced by LDL MIF Tel-U is the discovery of numerous complaints from students who are or have been taking LDL programs in the department. To overcome this problem, the first step to be taken is to do some preliminary research. This preliminary research was conducted by interviewing students of LDL MIF Tel-U, and benchmarking with competitors, the MIT BINUS Online Learning.

Table I. 1 Types of Complaints and Comparison with Competitors
(Source: In Depth Interview, 2015 and BINUS Online Learning Management, 2015)

No.	Types of Complaint	Telkom University LDL MIF Condition	BINUS Online Learning MTI Condition
1.	Unresponsive Admin	There is only one admin that do several jobs at the same time.	There more than one admin so that jobs could be easily distributed
2.	Internet Network Disruptions	Unstable internet network, resulting to interrupted voice connection.	Have a standard conncetion speed for the students, so the connection is more stable

Table I.1 Type of Complaints and Comparison with Competitors (Continued)
(Source: In Depth Interview, 2015 and BINUS Online Learning Management, 2015)

No.	Type of Complaints	Telkom University LDL MIF Condition	BINUS Online Learning MTI Condition
3.	Inadequate Lecture Materials	Lecture materials only in the form of *Power Point* and given during lectures taking place.	Lecture materials in the form of Integrated Learning Management is given at the beginning of the semester.
4.	File sharing services are often late	Lectures file sharing done manually by administrators in an unspecified time.	Sharing files done automatically by the lecturers after the lecture session is done.

From Tabel I.1 above it can be seen that LDL MIF Tel-Uhad some complaints coming from the students. These complaints can be used as a parameter to customer disexpectation with the services. Meanwhile, the BINUS Online Learning MTI existing lecture systems has been running well, so no complaints discovered regarding the similar services that been found in MIF LDL Tel-U. Since there are a number of complaints told by the MIF LDL Tel-U, the quality improvement is urgently needed.

I.2 Problem Formulation

Quality Function Deployment (QFD) is a Voice of Customer (VoC) based structured method and optimized the designs, materials, and also the process of making sure the needs of customers have been fulfilled (Qureshi, 2012). In previous research, the implementation of QFD in the field of education has been done before in Universities in Khyber Province Pakhtoonkhawa (KPK), Pakistan (Qureshi et al, 2012). The usage of QFD method could be integrated with Kano Model to analyze the needs of the customers (Prawita, 2001). In this research, the customer needs data which is the input of QFD is obtained from separated research that has been done using an Integration of E-SERVQUAL for Higher Education and Kano model (Pawesti, 2016). Integration of

E-SERVQUAL for Higher Education and Kano model in QFD will give the systematic steps and operational in order to fix and improve the qualities to those attributes (Fauzen and Djalal, 2011).

In this research, QFD method is applied to help LDL MIF Tel-U to improve their qualities so that it could fulfill the customer needs. Some of the problems that could be formulated in this research are:

1. What are the technical requirements that could be used to fulfill the customer needs of LDL MIF Tel-U according to the customer needs that obtained from Kano Model?
2. What are the critical parts that could be used to increase the quality of LDL MIF Tel-U?
3. What are the steps recommended to increase the quality LDL MIF Tel-U in order to satisfy customer needs?

I.3 Research Objectives

The objectives of the research in Long Distance Learning Program in Magister of Engineering Telkom University are as follows.

1. Identify technical requirements of LDL MIF Tel-U based on true customer needs that obtained from Kano Model to meet the customer needs.
2. Identify critical parts to improve the LDL MIF Tel-U quality.
3. Recommend the steps need to be taken to improve the quality of LDL MIF Tel-U.

I.4 Research Limitation

The research limitation of Long Distance Learning Program in Magister of Informatics Engineering Telkom University are as follows.

1. LDL MIF Tel-U *customer needs* in this research is obtained from the previous research that used the integration of E-SERVQUAL for Higher Education and Kano Model.
2. The respondents of this research is the students and alumni of LDL MIF Tel-U.
3. The research only done until QFD second iteration
4. Not until the implementation

I.5 Research Benefits

The benefits that can be obtained from this research are as follows:

1. Provide the recommend steps to take by LDL MIF Tel-U to improve the quality.
2. Can give the idea of the concept development of the services that are most optimal for LDL MIF Tel-U students.

I.6 Writing Systematics

This research is described in a systematic writing as follows.

Chapter I Introduction

This chapter explained the background research, problem formulation, research objectives, boundaries of research, benefits of research, and writing systematics.

Chapter II Literature Review

This chapter explains about the literature that relevant to the method of quality improvement. In addition, it also describes the theories used in the research to solve existing problems.

Chapter III Research Methodology

This chapter describes the steps of detailed research as outlined in the conceptual model and the systematics of problem solving that includes; the data collection stage, the stage of data processing by creating first iteration of QFD (House of quality), concept development, and creating second iteration of QFG (part deployment) which will be

analyzed and then continued to the stage of recommendation, and summary and recommendation making.

Chapter IV Data Processing

This chapter describes the steps of the research in detail, covering; data collection, the encoding of the true customer needs, data processing with multiple sequences, ie QFD first iteration (House of Quality) which includes the determination of planning matrix, determination of technical requirements, determining the strength of the relationship between true customer needs and technical requirements, determining the targets, and a ranking for each of the technical requirements. After performing data processing using HOQ, further developing and selecting the concept using pros and cons and decision matrices. After concept selection done, followed by the data processing in the second iteration of QFD (part deployment) to determine the critical part.

Chapter V Data Analysis

In this chapter described the analysis of the data processing has been done in chapter IV. Each step is analyzed in detail. After those the formulation of recommendations for the improvement of LDL MIF Tel - U are done.

Chapter VI Conclusion and Suggestion

In this chapter explained the conclusion from the research has been done. This chapter also provided suggestion for the future research and for LDL MIF Tel-U.