

# CHAPTER I

## INTRODUCTION

### 1.1 Background

As government works for citizens, it has a responsibility to improve public services quality. A way to improve it is by collecting aspirations and complaints from citizens (Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik, Pasal 36, Ayat 1). As a result, most of government institutions in Indonesia have a public aspiration and complaint handling channel. However, there are some particular problems that they need to overcome each day (Sesunan 2015).

First, they need to handle a big amount of aspirations and complaints each day. Since there are hundreds or even thousands of aspirations and complaints, scattered aspirations' and complaints' documents might occur. If the documents were lost, then the reports might not be followed-up. Another problem is disposition and bureaucracy coordination require much time. Location disparities might become another problem. Citizens who work and live on suburbs or villages have a far access from central government area. Since citizens did not know the authority coordination on a particular problem, there is a hassle on which government institution should the report be submitted. Another problem is that there is no transparency on the follow-ups of the reports. Ever since the citizens submit a report, there is no notifications from

the appointed government institution on the follow-ups of the report. As a result, citizens do not know whether their reports have been followed-up or not.

As the problems become a big concern, government try to find a way to solve them. According to the survey in 2012 from Asosiasi Penyelenggara Jasa Internet Indonesia (APJII), internet users in Indonesia has reached 63 million people or 24.23 percent of total and positioned as the Top 8 internet users in the world (Yusuf 2012). Semiocast's study (2012) found that Indonesia is positioned as Top 5 country in the world which have Twitter accounts and Jakarta has the highest rank of the most active Twitter city in the world, as well as 35.2 million Facebook members in Indonesia (Emarketer 2011). Since Indonesian society has a high spirit to be connected with friends, relatives, or even meet new people through internet and social media, such as Twitter or Facebook, the government views this as an opportunity.

A product of innovation that government offers is LAPOR!. LAPOR! is established as a hub to integrate almost all public aspiration and complaint handling channel on each government institution. There are three principles of LAPOR!: ease of access, integrated, and completion (LAPOR! 2015; Sesunan 2015; Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik, Pasal 37, Ayat 1). As LAPOR! offers ease of access, it ensures everyone can report easily through its website (<https://lapor.go.id/>), mobile apps, or simply by texting to 1708. As for the second principle, LAPOR! is connected with more than 80 government institutions. It allows users to virtually place complaints in one portal without being hassle to find the

appropriate local authority. Last but not least, LAPOR! supports completion of each report by featuring every validated report and its follow-up on LAPOR!'s website, allowing public discussion and everyone to track the progress of the reports. In addition, LAPOR! has two commitments to citizens: (1) verify reports in three working days starting from the day reports are received and (2) give an initial response of reports in five working days starting from the day reports are dispatched to the appropriate authority (LAPOR! 2015; Sesunan 2015).

According to Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik, Pasal 35 Ayat 3a and Pasal 39 Ayat 1, citizens need to be involved in monitoring public services by reporting or complaining to the appropriate authorities, as well as evaluating and appreciating them. Since LAPOR! is a communication tool for government to bridge citizens and government in improving public services, there is a responsibility from LAPOR! to allow citizens monitor and evaluate its work performance. Therefore, LAPOR!'s performance in holding commitments should be captured and shown to public. However, LAPOR!'s current data analysis application has not comprehensively depict it.

Based on LAPOR!'s record on April 2015, LAPOR! has been actively used by more than 290,000 users with an average of receiving 800 daily reports. Furthermore, in coordination with Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi (KemenPANRB), LAPOR! has a potential to

be a national integrated public aspiration and complaint handling system (Malau 2015; Berita Satu 2014), that is why its service needs to be improved.

## **1.2 Problem Identification**

Based on the background, identified problems on the current system are, as follows:

- 1) LAPOR! has not comprehensively depicted its work performance to citizens on handling citizens' complaints, in accordance with the promised verification time and initial response time (Putra 2015, Suprpto 2015);
- 2) there is a responsibility from LAPOR! to allow citizens monitor and evaluate its work performance (Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik, Pasal 38 Ayat 1), which is not available for the meantime.

## **1.3 Problem Scope**

The scope of analyzing and designing data warehouse in data analysis application for an online-based public aspiration and complaint handling system are:

- 1) this final project would discuss the analysis and design of data warehouse to support data analysis application of citizens' complaint handling process, until planning the implementation of the data warehouse;
- 2) the data warehouse is specifically designed for LAPOR!;

- 3) the data warehouse is designed based on three facts: reports' completion level, reports' verification time, and reports' initial response time;
- 4) the data warehouse is designed based on four dimensions: institution, topic, location, and time;
- 5) time dimension (tren waktu) could be viewed in four options: weekly, monthly, annually, and overall (since 2012);
- 6) the application design in business intelligence track is referring to LAPOR!'s design standard;
- 7) this final project would leave out discussions on the application code and technical details on security aspect.

#### **1.4 Objectives**

The goal of this final project is to build a data warehouse for a data analysis application on an online-based public aspiration and complaint handling system to improve public service quality. This system is expected to provide a data warehouse in supporting a solution that act as:

- 1) realization of LAPOR!'s principles: integrated and completion;
- 2) realization of LAPOR!'s commitments to citizens:
  - a) a report is verified in three working days, since the day the report is received;
  - b) the initial response of a report is five working days, since the day the report is dispatched to an appropriate authority.

- 3) a LAPOR!'s initiative in involving citizens to monitor and evaluate government's work performance, as stated in Undang-Undang Republik Indonesia Nomor 25 Tahun 2009 tentang Pelayanan Publik, Pasal 35 Ayat 3a and Pasal 39 Ayat 1.

## **1.5 Methodology**

Business dimensional life cycle road map is used in developing LAPOR!'s data warehouse to support its data analysis application. There would be some methods used during requirements gathering phase, while designing the data warehouse would be done using Kimball's Nine-Step Methodology.

### **1.5.1 Requirements Gathering Methods**

The user requirements are collected through several sources:

- 1) literature study and document analysis;  
Search for related books, publication journals, theses, legal documentations, and web resources to dig out information regarding to theories, concepts, methodologies, and frameworks of data warehouse and system development.
- 2) interview;

This method is carried out by asking particular questions related to the problems encountered by current system, user requirements (functional and non-functional requirements) and expectations of the proposed system.

3) observation.

This method is conducted by directly observing LAPOR!'s workflow and how data are presented on its current data analysis application.

### 1.5.2 Kimball's Nine-Step Methodology

As for developing the data warehouse, the methodology used is Nine-Step Methodology by Kimball and Ross (2010, 211):

1) choosing the process;

In this step, an identification of main components of LAPOR!'s business process will be made. These components are then known as fact tables.

2) choosing the grain;

After determining the fact tables, grains of each fact table are identified.

3) identifying and conforming the dimensions;

Identifying dimensions needed for each fact table is the next step of this methodology.

4) choosing the facts;

Facts that would be included in the data warehouse are chosen in this step. This also includes the keys of each dimension table.

- 5) storing pre-calculations in the fact table;

This step identifies every grain that needs to be pre-calculated. As a result, there would be explanations of the calculation for each grain.

- 6) rounding out the dimension tables;

This step completes the dimension tables which have been previously identified. Therefore, explanations of table description and attributes needed for each dimension table are determined.

- 7) choosing the duration of the database;

Duration of the database is determined in this step, based on LAPOR!'s need.

- 8) determining the need to track slowly changing dimensions;

This step aims to provide a solution if there is changing in dimensions' attributes.

- 9) deciding the physical design.

A dimensional model would be generated in this last step. In this case, star schemas would be built.



## **1.6 Report Structure**

The author will organize this report into several chapters:

### **CHAPTER I : INTRODUCTION**

The first chapter will focus on the background explanation of this project, followed by discussions on problems, scope, objectives, methodology, and report structure.

### **CHAPTER II : LITERATURE REVIEW**

This chapter will focus on discussing the legal basis, correlating theories and concepts for developing the application.

### **CHAPTER III : THE CURRENT SYSTEM**

This chapter will explain the profile of the program, vision and mission, organizational structure, and analysis of the current system. There will be three subsections discussed on the current system analysis: the workflow, operational database structure involved in citizens' complaint handling process, and problems encountered by current system.

### **CHAPTER IV : THE PROPOSED SYSTEM**

The proposed system will be analyzed in this particular chapter. The analysis will be conducted on several subsections. It starts with feasibility analysis, analysis phase, and design phases. Analysis phase includes user requirements, which consist of functional and non-functional requirements. As

for design phases, it includes technology track (technical architecture design and product selection and installation), data track (dimensional modeling, physical design, and ETL design and development), business intelligence track, and data warehouse implementation plan. The analysis conducted on this chapter will be connected with methodologies, theories, and concepts which have been explained on previous chapters.

## CHAPTER V : CONCLUSION AND SUGGESTIONS

The last chapter will summarize this project. Conclusion and suggestions for further development are discussed on this chapter.

