CHAPTER I INTRODUCTION

I.1   Background

The rapid development of information technology is something that cannot be avoided in various aspects of life. In Indonesia itself, starting from government administration to citizens' lives, it is related to information technology. There have been many community activities that have been helped or replaced by the presence of information technology. As the closest example in citizens' lives, buying and selling goods that can now be done online and using technology to send instant messages and telegrams have reduced sending letters using postal services. While in the field of government, the development of information technology has undergone many developments, starting with the enactment of Presidential Instruction No. 3 of 2003 concerning the implementation of E-Government. According to the World Bank (World Bank, 2012), the definition of e-Government is: "E-Government refers to the use of information technology by government agencies (such as Wide Area Networks, the internet, and mobile computing) that can transform relationships with citizens' businesses, and other arms of government." Information technology is used in government administration and provides electronic-based public services to the public (Fahlefi, 2014; Holle, 2011; Nugraha, 2018).

The use of information technology in all aspects of life has encouraged the application and use of information technology to integrate city elements to support technology-based urban life, which is commonly called a smart city (Meijer & Bolívar, 2016). Smart City is a city planning concept that utilizes technology to make life easier and healthier with high efficiency and effectiveness. (Muliarto, 2015). Based on this concept, several cities in Indonesia have tried to implement smart cities to increase efficiency, improve public services, and improve the welfare of citizens. For example, in Bandung, the implementation of Smart City began with the presence of the Mayor of Bandung Regulation Number 1470 of 2018 concerning the Master Plan for the Smart City of Bandung, which aims to develop "Bandung as a Smart City" based on the six dimensions that exist in the smart city, namely: Smart Governance, Smart Environment, Smart Living, Smart

People, and Smart Mobility (Cohen, 2014). The implementation of Smart City is carried out to improve the quality of services to the community. As conveyed by the Mayor of Bandung in the 'Indonesia Smart City Forum 2016', "Smart cities can change the model of service to the community so that there is no longer a conventional way where there are meetings between officers and the community". An example of the implementation of a smart city in Bandung is that currently, almost all local government agencies in the Bandung City Government have utilized digital channels, both services from web pages or through applications available via cell phones. So that primary population and civil registration services in the city of Bandung can now be accessed boldly through digital applications by the public.

In line with the development of a smart city in Bandung, in a smaller scope (village or sub-district), the concept of a technology-based village was also developed and is commonly called a smart village. A Smart village is a derivative concept that adopts components or indicators of a smart city. Although there is no convention on the smart village concept, in general, a village can be said to be a smart village if the village is innovative in using information technology to improve quality of life, efficiency, and competitiveness in economic, social, and environmental aspects (Munir, 2017; Ramesh, 2018). In its implementation, this understanding is interpreted in different ways. The implication is that every village declares as a smart village without being supported by the exact and sufficient smart village dimensions. Based on the above concept, Sumur Bandung Sub-district, a government with a smaller scale than the Bandung City Government, can apply the Smart Village concept to solve the problem intelligently.

According to the Sumur Bandung Sub-District Plan and Strategy for 2018-2023. One of the problems experienced by Sumur Bandung Sub District is the absence of facilities for processing and final processing of waste (TPPAS). Currently, the TPPAS used are only temporary and managed by the West Java Provincial government and also their useful life will ending soon. With the Bandung City waste management pattern, which still use the Collect - Transport - Dispose way, it will lead to an ever-increasing pile of garbage, resulting in various environmental problems and the inconvenience of living in the residents of the

Sumur Bandung sub-district. As a result, a improvement in waste management model is required, including intensifying waste management model using 3R. (Kecamatan Sumur Bandung, 2018)

From the problem above. The implementation of Smart Village is appropriate if it includes the smart living dimension. Because Smart Living has four missions that actualize a decent, comfortable, and efficient neighbourhood, the smart living dimension was divided into two aspects that are trying to create safety and comfort and easiness to access public facilities (AA. Aziiza & TD. Susanto (2020). The smart living in the smart village concept can undoubtedly help solve problems in the Sumur Bandung sub-district. Following the Smart Village concept itself, a village can be a smart village if it innovatively uses information technology to increase the quality of life (Munir, 2017; Ramesh, 2018). So the application of Smart Village as a solution must be adaptive to the development of information technology. However, information technology itself will cause new problems if management is seen only as an activity provision of software/hardware for automation needs. Alignment between information technology and business is needed. Enterprise Architecture is a tool for managing information technology in organizations that are used to achieve alignment of information technology with business, discussion of enterprise architecture modelling is needed to produce an information technology blueprint that is aligned with the business so that it can help plan and implement solutions well and on target.

In designing an Enterprise Architecture, a framework is needed as a framework or tool for developing an enterprise architecture. Several previous studies have used the TOGAF (The Open Group Architecture Framework) framework to design enterprise architecture. One plan for enterprise architecture of disaster management information systems with case studies at the Regional Disaster Management Agency of West Java Province (BPBD). This research produces an information system architecture modelled with business architecture, application architecture, data architecture, technology architecture, gap evaluation, and migration plans. Enterprise architecture modelling aims to produce a blueprint for the development of information systems for disaster management. This research concludes that the enterprise architecture planning process for waste management

can be carried out using the TOGAF framework. These findings are the basis for the author to use the TOGAF framework in designing enterprise architecture.

Based on the background in writing above, this research focuses on implementing the Smart living dimension in a smart village with the guidelines from the blueprint for Waste Management in Sumur Bandung Sub-District, which aims to be guideliness to help overcome problems increasing pile of garbage in the Sumur Bandung Sub-District.

I.2   Problem statement

Based on the background that has been made, there are problems that become study material in this research are as follow:

1. How blueprint in the form of Enterprise Architecture with TOGAF ADM on the economy and development function in facilitating efforts to preserve the environment and the cleanliness program's implementation and Carry out management activities and preparation of reports that can help realize the creation of the Smart village concept on the Smart living indicator.
2. How the IT Roadmap as a reference for the Sumur Bandung Sub District conducting Smart village model on the development of information technology in the waste management process.

I.3   Research objectives

The purpose of this final project research based on the formulation of the problems that have been put forward is producing an enterprise architecture design for the Section of Economy and Development at Sumur Bandung Sub District, in order to provide recommendations in the form of a gradual and sustainable waste management information system in the form of a roadmap.

I.4   Research scopes

The problem limitation aims to limit the scope of the research so that the research discussion focuses on the problem. The limitations of the problem in this research is

1. Design of blueprint adopting TOGAF ADM 9.2 framework.
2. TOGAF ADM 9.2 focus on generating artifact and limited only in phase, preliminary phase, architecture vision, business architecture, information systems architecture, technology architecture,opportunities and solutions, and migration planning.
3. Artifact creation refers to the TOGAF architecture content framework. In the core Business Architecture that is not made is the Product Lifecycle Diagram, and the extensions made are Goal/Objective/Service Diagrams and Process Flow Diagrams. For Data Architecture all core diagrams are created. While the Application Architecture, the core diagram that is not made is the Application and User Location Diagram. For Technology Architecture all core diagrams are made, as well as for Opportunities and Solutions all core diagrams are made

I.5   Research Benefits

This research is structured with the hope that it can provide some theoretical and practical benefits as follows:

1. Can provide implementation of smart village in Sumur Bandung sub-district to increasing the percentage of excellence kelurahan according to sub district goals by overcome the strategic issues in Sub District with designing enterprise architecture waste management blueprint.
2. It can be a reference and essential information for other researchers when analyzing and designing an Enterprise Architecture in different organizations.