ANAYSIS AND DESIGN OF ENTERPRISE ARCHITECTURE USING TOGAF ADM IN ANALYTIC OF CUSOTMER CARE MANAGEMENT AT TELECOMMUNICATION COMPANY

[1]Lanusgana Amerta, [2]Yuli Adam Prasetyo, S.T., M.T., [3] Dr. Basuki Rahmad, CISA., CISM., CRISC

[123]Information System Program, Industrial and System Engineering Faculty, Telkom University

[1]lanusgana@gmail.com, [2]adam@telkomuniversity.ac.id, [3]basuki@transforma.co.id

Abstract

PT XYZ is one of the biggest cellular telecommunication provider in Indonesia. One of its main concern is Customer Care Management. This research focuses on the Analytic of Customer Care Management, which positioned under Sales Directorate. Analytic of Customer Care Management has the main purpose to do analytical services and strategies, policies, and processes management for Customer Care Management. In this research, TOGAF is being used to develop Analytic of Customer Care Management's enterprise architecture. This research is limited only from preliminary phase to migration planning phase. In each of these phase, existing architects are being identified and also target architectures are being proposed. Hopefully, this research could help provide insight to the telecommunication company regarding baseline of Analytic of Customer Care Management.

Keywords: Enterprise Architecture, TOGAF ADM, Customer Care Management, Telecommunication Company

1. Introduction

PT XYZ is one of the biggest cellular telecommunication provider in Indonesia. There are a lot of products to offer to customer, these products are categorized to two big categories. The first category is core product or legacy, which consists of voice, text, and data bunding services. The second category is the content product, which mainly consists of third-parties' products that bundled with company services.

Customer Care activity is one of the most important thing a telecommunication company must managed properly to maintain customer satisfaction, hence gaining growth for the company as the whole. Therefore, it has been establishing Customer Care Management to take care of this activity. Positioned under the Sales Directorate, Customer Care Management or CCM has main task to manages customer interaction (information, request, and complain) via various touch point (walk-in, call-in, e-care, and self-care). Moreover, it is important for the company to manages the Customer Care properly, therefore company could establish good relation with the customers (Bianchi, Schiavotto, & Svobod, 2014).

Customer Care Management currently being divided into two big section. The first section is the operational section, this section is responsible to the operation of managing customer interaction through multiple touch point on the daily basis. The next section is the analytic section, which responsible to provide analytic, such as planning, system development and maintenance, and facility for the operational section.

To provide analytic for the operational section, analytic section has been developing and maintaining some crucial systems for the Customer Care Management. These systems are combination of in-house developed system and cost-off-the-shelf system provided by vendors. However, more systems might be needed to adapt to the ever-changing business environment, and so could maintain high level of growth for the company.

Hopefully, by using the approach adapted from TOGAF ADM, analysis and design of enterprise architecture for better analytic of Customer Care Management could be developed.

There are two problems that could be identified in this research, the problems are as follow:

- Tactical, strategic, and forecast analytic dashboard are needed to support the business service, hence better decision-making and overall improved performance could be achieved.
- More agile policies and processes improvement are needed to accommodate dynamic business situation.

2. Research Systematic

This section has the purpose to shows the concept o the research that being done based on TOGAF Architecture Development Method. In this research, the research systematic is as follows:

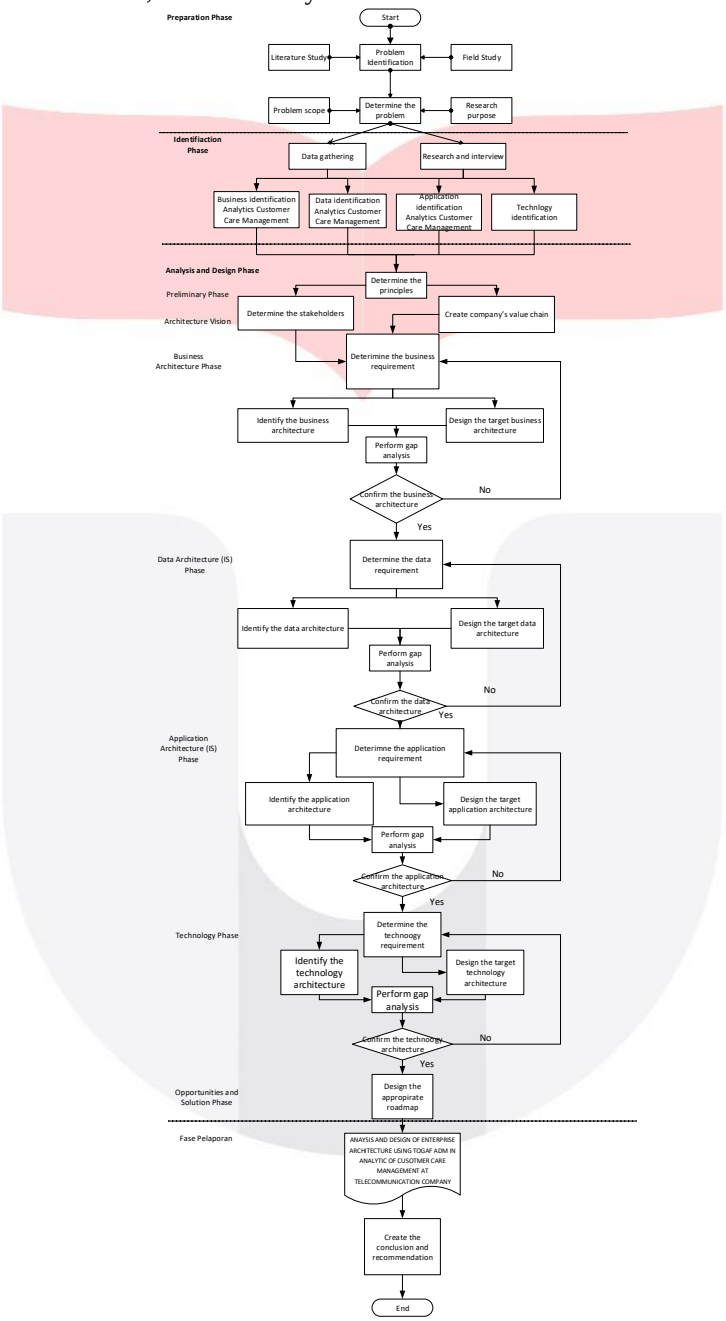

Figure 1 Research Systematic

3. Literature Study

3.1 The Open Group Architecture Framework (TOGAF)

The Open Group Architecture Framework or TOGAF is a framework that can be used to developed an enterprise architecture for a company or an organization (The Open Group, 2011) (Dwi, Prasetyo, & Hanafi, 2016) (Christini & Rahmad, 2015). TOGAF plays an important role in the development of enterprise architecture as a standardization and also as an effort to reduce risk during the development of the enterprise architecture.

Phase A: Architecture Vision

This phase explains about the vision of the architecture, including the scope, definition of related stakeholders, and also an approval to start the development of the enterprise architecture

Phase B: Business Architecture

This phase explains about the strategy, products or services, organization, function, processes, and other information related to business of the organization

Phase C: Information Systems Architectures

This phase explains about the information system architecture. There are two big division in this section:

- Data Architecture, which explains about the data involved in the information system architecture
- Application Architecture, which explains about the application involved in the architecture

Phase D: Technology Architecture

This phase explains about the technology architecture that being used and/or will be used in the enterprise architecture

Phase E: Opportunities and Solutions

This phase identifies the architecture deliverables, such as project, program, and/or portfolio that effectively realize the target architecture from the previous phase

Phase F: Migration Planning

This phase aim to deliver the plan of migration from the previous architecture (baseline) to the target architecture

Phase G: Implementation Governance

This phase explains about the monitoring of the plan of implementation, to ensure the implementation is going as it should be

Phase H: Architecture Change Management

This phase organizes the procedure to manage the change of enterprise architecture, hence ensuring continuity of the life cycle of the enterprise architecture

ADM Architecture Requirements Management

This section explains about the process to manage the requirement of all phases in the TOGAF ADM

3.2. Customer Relationship Management (CRM)

Customer Relationship Management or CRM is a term that being used to describe the strategy and technology used by a company or an organization to manage and analyze its interaction between the company or organization and the customers. In CRM, business will be helped to arrange and log customer information centrally, therefore further customer identification, including customer satisfaction measurement could be well executed (Jaelani, 2016).

3.3. Performance Dashboard

According to Wayne W. Eckerson, performance dashboard is essentially a performance management system. It has the purpose to translate organization's strategy into objectives, metrics, initiatives, and tasks for each group and/or individual within the organization. It works by providing information and insights to enable business users to improve the decision-making processes (Eckerson, 2010).

4. Discussion

a. *Preliminary Phase*

This is the first phase of the TOGAF ADM. During this phase, a set of principles is developed.

Table 1 Principle Catalog

Category	Principle
Business Principles	Adaptive CCM
	Maximizing Benefit for Company
	Business Continuity
	Beyond Customer Expectation
	Common Use Applications
	Information Management is Everyone's Business
	Compliance to Regulation

Data Principles	Data is Shared
	Data is Assets
	Data Security
Application Principles	*Ease-of-Use*
	Technology Independence
Technology Principles	*Interoperability*
	Control Technical Diversity

b. *Architecture Vision*

This phase also the initial phase in the TOGAF ADM. This phase has the objective to define the vision of the architecture. Furthermore, this phase includes, defining the scope and identifying stakeholders. One of the artifact that being explained in this phase is Architecture Vision, as in this phase, the Architecture Vision is as follow:

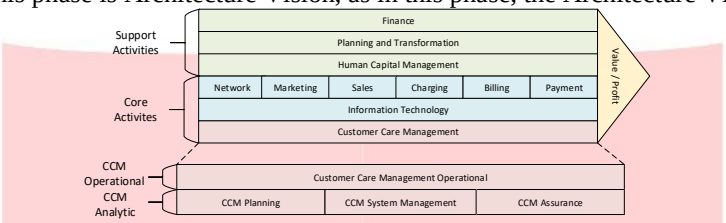

Figure 2 Value Chain Diagram

: Focused in the research

c. *Business Architecture*

This section provides the architecture of business of analytic of Customer Care Management. One of the artifact used in this section is Business Requirement that has the purpose to identifies the requirement of business needed by the analytic of Customer Care Management. Furthermore, this requirement then will be used as guidance of developing necessary business architecture, if needed.

Table 2 Business Architecture Requirement

No	Requirement
1	Provide agile policies and processes improvement
2	Every policy and process must be aligned with the strategic plan
3	Provide analytic and decision support for each level of stakeholder (operational, tactical, and strategic)
4	Ensure business continuity throughout customer care management

Moreover, this business architecture also explains the proposed improvement of business processes by adding new analytical processes and imrpove current processes of development of policies and processes as shown in the table below.

Table 3 Business Service/Function/Processes Catalog

Function	Business Service	Processes
Customer Care Management	Customer care operational analytics service	Customer Satisfaction Identification
		Customer Care Operational Analytic Reporting
	Customer care tactical analytics service	Customer Care Tactical Analytic Reporting
	Customer care strategic analytics service	Customer Care Strategic Analytic Reporting
		Customer Care Forecast Analysis
	Policies and processes management service	Customer Care Policies and Processes Analysis and Development

: Target

d. *Data Architecture*

Data architecture phase has the purpose to define all related matter regarding data architecture. This is the third phase of TOGAF Architecture Development Method. This phase is part of information system architecture phase.

Generally, this phase has the purpose to explains about the relationship of data, applications with corresponding data entities, and mapped the data for application development. One of the artifact that being used in this phase is data dissemination diagram, this artifact has the purpose to provide information regarding the relationship between application and its corresponding data entities.

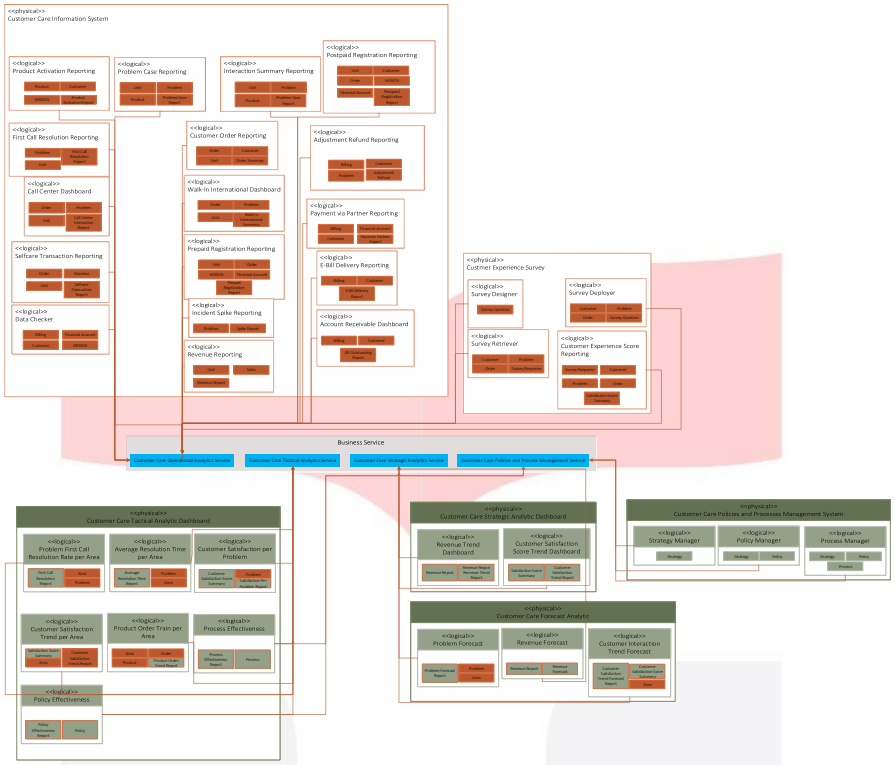

Figure 3 Data Dissemination Diagram

e. *Application Architecture*

Application architecture identifies the applications that being used to processes data within the Analytics Customer Care Management. Application could help provide useful information that supports business activities, hence improve business performance.

In this architecture, existing application would be analyzed and mapped. Then, new or improved applications would be proposed. Furthermore, these proposed applications aim to fulfil business requirement while also considering the data architecture needed to develop this architecture.

One of the artifact used in this phase is application communication diagram. This artifact helps determine the application proposed and identified, and then also provide information of the relationship between those application.

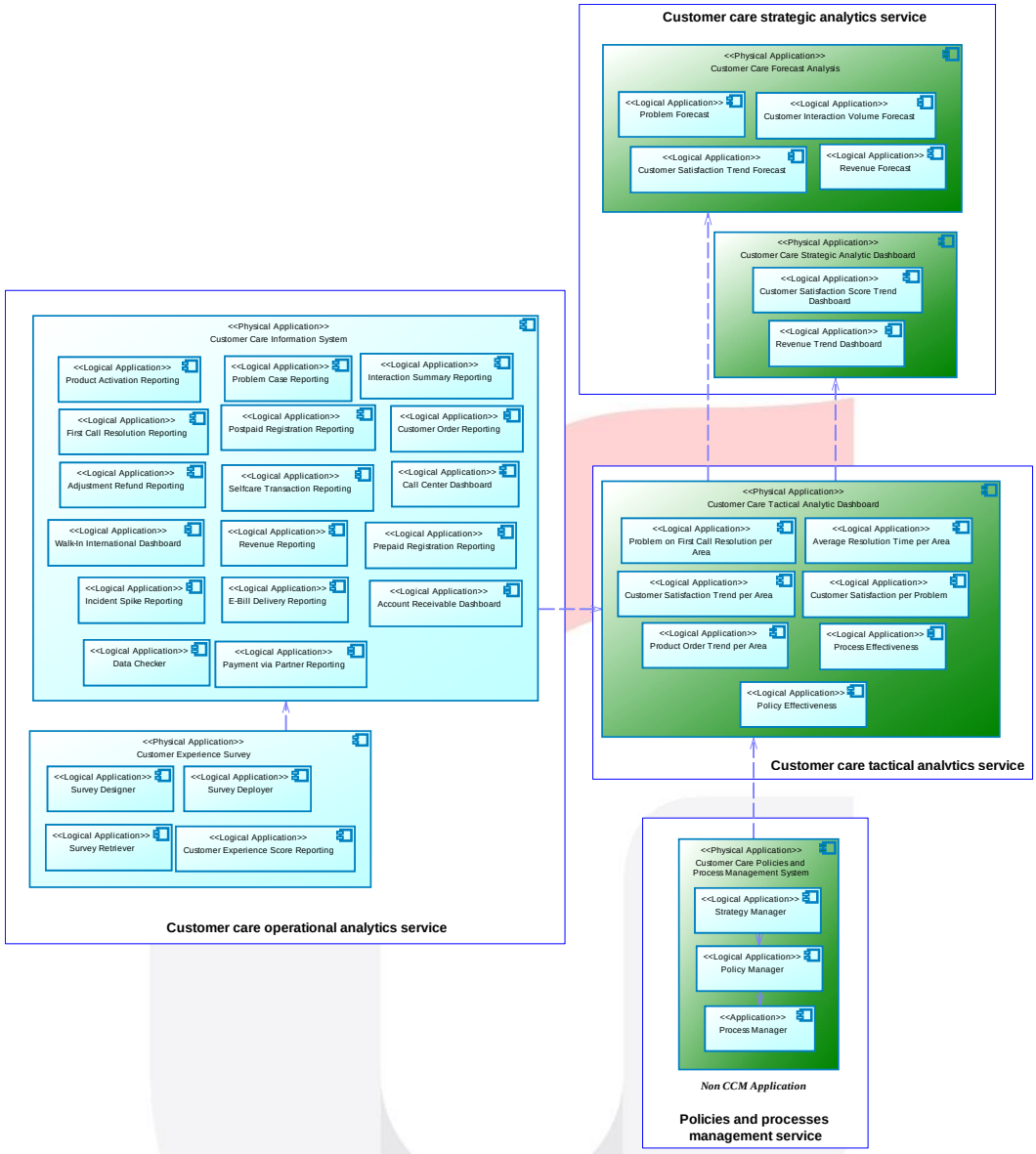

Figure 4 Application Communication Diagram

f. *Technology Architecture*

Technology architecture identifies usage of technology to enables applications within the company, hence business performance could be improved. In this phase, relevant technology architecture would be developed by considering application architecture that has been developed previously. One of the artifact produced in this architecture is environment and location diagram. Environment and location diagram shows the identified and proposed technology to support the application and data requirement.

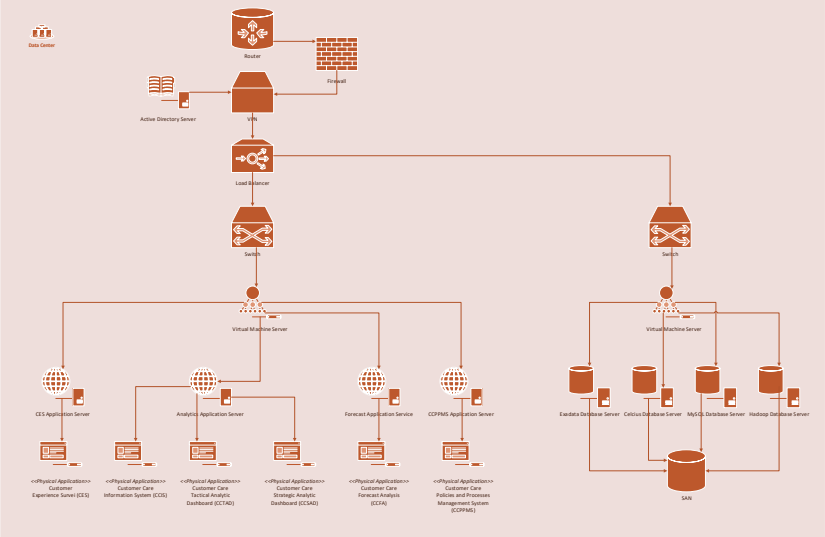

Figure 5 Environment and Location Diagram

g. *Opportunities and Solution Architecture*

Opportunities and Solutions is one of TOGAF Architecture Development Method phase that has the purpose to evaluate the design model of developed architecture. This phase will then be the foundation or guidance for the implementation plan. This phase helps the implementation plan to achieve its target of implementation. One of the artifact used in this application is benefit diagram. This diagram has the purpose to explain the relationship of benefit of the opportunities identified and proposed.

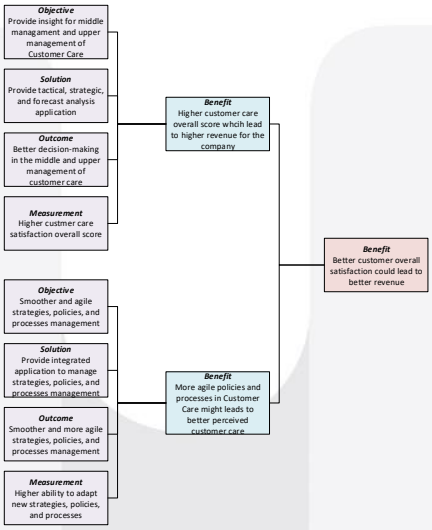

Figure 6 Benefit Diagram

h. *Migration Planning*

Migration planning is a phase within the TOGAF Architecture Development Method that has the purpose to ensure implementation and migration plan coordination. Moreover, it ensures the migration from the baseline to the target architecture. One of the artifact used in this application is architecture roadmap, it helps identify what project need to be met in certain timeline.

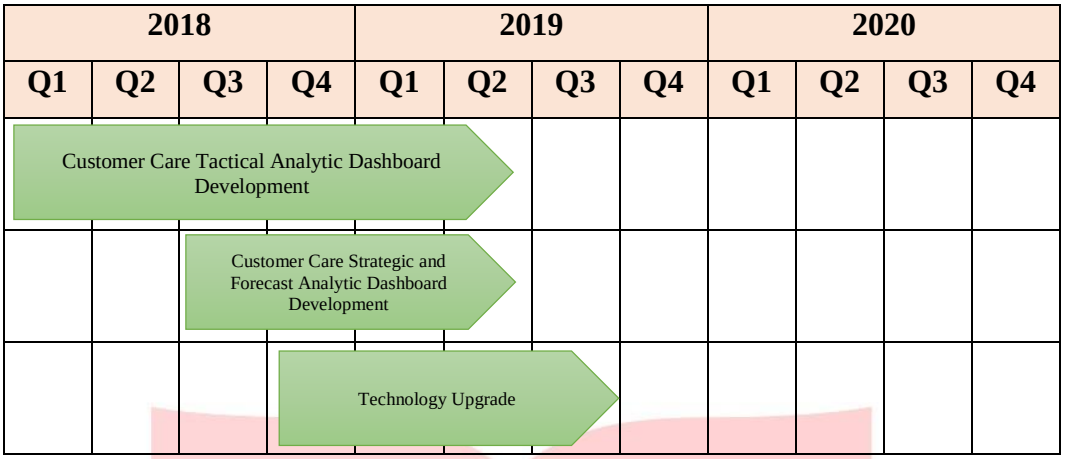

Figure 7 Architecture Roadmap

5. Conclusion and Recommendation

5.1 Conclusion

To be sustainable in current business situation Customer Care Management must be able to adapt to the dynamic business situation. Therefore, some improvement needed to be done to the business. One of solution is to employ enterprise architecture to help company to determine better architecture for the enterprise.

TOGAF ADM is used to perform development of the enterprise architecture. This framework consists of several architecture phases, they are: preliminary architecture, architecture vision, business architecture, information system architecture, technology architecture, opportunities and solutions, and migration planning. This phase then produce identification of current architecture, and based on that current architecture, target architecture is developed.

This research finds that business architecture is need improvement, it needs new services and processes, especially in analytic services and improvement in policies and processes management. Furthermore, improvement in data architecture is needed and some new entities are introduced to enrich the analytical application needed to improve analytical services. Moreover, to be able to develop and maintain the target application technology architecture also need to be improved. Then roadmap is being determined as explain in the discussion above.

Hopefully, this research could help analytic of Customer Care Management in telecommunication industry to improve it business which may leads to higher benefit or value of the company.

5.2 Recommendation

As the end of the research, it is recommended to:

- Consider this research to be guidance of IT development in Analytic of Customer Care
- Continue the phase TOGAF ADM as necessary to establish enterprise architecture capabilities in the Analytic of Customer Care Management

Bibliography

Bianchi, R., Schiavotto, D., & Svobod, D. (2014). Why companies should care about e-care | McKinsey & Company. Retrieved from http://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/why-companies-should-care-about-ecare

Christini, C., & Rahmad, B. (2015). PRESENTING ENTERPRISE ARCHITECTURE STRATEGIES USING BUSINESS MODEL CANVAS (CASE STUDY OF E-COMMERCE PT XYZ), (1), 77–87.

Dwi, T. Y. P., Prasetyo, Y. A., & Hanafi, R. (2016). INFORMATION SYSTEM STRATEGIC PLANNING BASED ON TOGAF ADM FRAMEWORK IN 1ST REVENUE FUNCTIONS DEPARTMENT OF REVENUE.

Eckerson, W. W. (2010). *Performance Dashboards: Measuring, Monitoring, and Managing Your Business, Second Edition*.

Jaelani, E. (2016). the Effect of Customer Relationship Management Toward Product Innovation At Football Distro in Bandung.