Research Article

International Journal of Information System and Technology (IJOINT)
Volume 01, Issue 02, PP. 63–78

TOGAF ADM Framework Design at Private Insurance Company PT Tugu Pratama

Tiara Anindita[1*], and Muhammad Qomarul Huda [2]
[1] Student, Faculty of Science & Technology, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia
Email: maulindita11@gmail.com [1]
[2] Lecture, Faculty of Science & Technology, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia
Email: mqomarul@uinjkt.ac.id [2]

*Corresponding Author Email: maulindita11@gmail.com

Received: January 17, 2025; Revised: January 30, 2025; Accepted: February 21, 2025

Abstract

This study aims to design an Enterprise Architecture (AE) using the TOGAF ADM (Architecture Development Method) framework for insurance companies, with a focus on improving operational efficiency, regulatory compliance, and customer experience. TOGAF ADM was chosen because of its ability to provide a structured and comprehensive approach to developing an architecture that is aligned with business objectives and technology needs. This research method involves analyzing business needs, mapping key business processes such as claim submission, insurance registration, promotion, customer service, and identifying supporting technologies such as HRD, finance and IT services. The results of the study indicate that the implementation of TOGAF ADM can help insurance companies integrate systems, improve data security, and ensure compliance with industry regulations. In addition, this design also supports product and service innovation, and increases the scalability and flexibility of the architecture to face market dynamics. However, this study also identified several limitations, including implementation complexity, significant resource requirements, and challenges in integrating legacy systems. Overall, the TOGAF ADM AE design offers a strong framework for the digital transformation of insurance companies, with the potential for positive impacts on operational efficiency, customer satisfaction, and business competitiveness.

Keyword: TOGAF, ADM Framework, Enterprise Architecture, Business Process, Information Technology.

1. Introduction

With the rapid development of technology today, it has influenced changes in various business sectors. The impact of this technological development is not only felt by Government Agencies, but also Private Agencies. Information Systems are used in every profession, from entrepreneurs to small business owners using information systems to reach consumers (Abubakre et al., 2022; Suseno, Y., & Abbott, 2021). Information systems can help a company achieve its goals, such as increasing profits and improving customer service (Mehmood, 2021). Companies can use information systems to increase revenue and reduce costs (Setyowati et al., 2021). To align business strategy and information technology strategy, organizations must implement enterprise information system architecture planning that will provide a framework for making appropriate long-term information technology decisions to consider the needs of the organization as a whole (Bhattacharya, 2018; Ettahiri et al., 2022). The alignment of the implementation of information systems with the needs of the organization can be answered by considering the integration factor in its development (Fu

et al., 2022). The purpose of integration is to reduce the gap that occurs in the system development process. To reduce this gap, a paradigm is needed to plan, design, and manage information systems called enterprise architecture. EA functions as a blueprint provider for systems and processes during the system development project (Pulkkinen & Hirvonen, 2005; Van der Raadt et al., 2010). EA is centered on infrastructure that includes hardware, software, and networks that can be aligned with the vision, mission and goals of the organization to run business processes supported by information technology (Abunadi, 2019; Espinosa et al., 2011).

PT Tugu Pratama Indonesia is a private insurance company engaged in the general insurance industry, reinsurance, and Sharia business. TIF, which is a division of Tugu that was formed to assist in business processes, especially providing support in information technology and transactions, developed an EA design called SITAP (Strategic IT Architecture Planning). The emergence of increasingly large business dynamics and developments has made the company change the Company's Long-Term Plan (RJPP) which includes web-based businesses and e-commerce, to adjust to this change it is necessary to develop an AE development design based on the TOGAF Framework in this company.

2. The Art of Research

According to Ward and Peppard (2002) about the efforts to implement information systems (IS) in organizations have three targets. First, improve work efficiency by automating various processes that manage information. Second, improve management effectiveness by satisfying the need for information for decision making. Third, improve competitiveness or increase the competitive advantage of the organization by changing the style and way of doing business. Strategic IS/IT planning is the process of identifying a portfolio of computer-based information system applications that will support the organization in implementing business plans and realizing its business goals (Abubakre et al., 2022).

Enterprise Architecture (EA) is a collection of various principles, methods and models used to design and realize the organizational structure, business processes, information systems and infrastructure of an enterprise (Rouhani et al., 2015). EA is a way to describe the operational model of an organization that covers various aspects, such as aspects of business planning, business operations, automation and supporting information technology infrastructure (Boh & Yellin, 2006; Saleem & Fakieh, 2020). In designing or developing enterprise architecture, it will be easier for architects if they follow a certain framework of thinking. This framework of thinking is known as the enterprise architecture framework. One of the AE frameworks that is widely used for developing company business processes is TOGAF (Saputra et al., 2022).

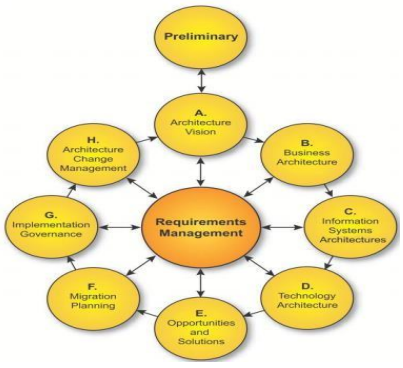


Figure 1. TOGAF ADM Development Phases

TOGAF is an enterprise architecture framework that provides methods and tools to assist in the acquisition, production, use, and maintenance of an enterprise architecture information (Yurisca, 2020). There are four

architecture domains that are commonly accepted as subsets of the overall architecture, including: business architecture, data architecture, application architecture, and technology architecture (Saputra et al., 2022). The most important part of TOGAF is the Architecture Development Method (ADM) (Ulmi et al., 2020). TOGAF ADM includes building an architecture framework, developing architecture content, transitioning, and managing the realization of the architecture (see figure 1) (Amalia & Supriadi, 2017).

3. Method

This study uses two methods, namely data collection method and architecture enterprise (AE) design method, data collection method is done by observation method, interview method, literature study and literature study. While the architecture enterprise design method is by using TOGAF Architecture Development Method (ADM). The analysis and development used is TOGAF Architecture Development Method (ADM) which consists of 6 stages, namely:

1. Preliminary Phase which aims to define the implementation of the current Enterprise Architecture, including identifying the company profile, company vision and mission, value chain analysis and identifying previous AE projects. The tools that will be used in this phase are value chain.
2. Architectural Vision Phase which aims to create a uniform view of the importance of information system strategy planning to achieve company goals formulated in the form of strategies and determine the scope of the architecture to be developed. The steps in this process include: identifying stakeholders, business goals and things that can support the achievement of business goals. The tools used in this phase are stakeholder view, and principle view.
3. Business Architecture Phase which aims to create a business model starting from the company's business processes, functions and activities. The steps that will be taken in this phase are: architectural baseline and architectural target. The tools used in this phase are flowcharts and diagrams from ArchiMate and product viewpoint.
4. Information System Architecture Phase which has two domains that define the output of the business architecture that has been created, namely data architecture and application architecture. Data architecture is done by identifying all data components that will be used by the application to produce the information needed through the data architecture baseline and data architecture target. Meanwhile, the application architecture is used to design an application that has been planned in the business architecture through the application architecture baseline and application architecture target. The tools used in this phase are diagrams from ArchiMate.
5. The technology architecture phase aims to describe the technology structure needed by the company to support application operations. The steps used in this phase are: describing the architecture baseline and creating a technology architecture target. The tools used in this phase are diagrams from ArchiMate.
6. The Opportunities and Solutions phase is created based on the results of the previous phase which will contain the results of the gap analysis from phase 2 to phase 4. The steps taken in this phase are: evaluating the strategic planning model that has been created in the business architecture phase, information system architecture, and technology architecture using a gap analysis matrix.

4. Result

1. Preliminary Phase

In this phase, the author defines the company's vision and mission and analyzes the company's activity value chain. The vision of Tugu Pratama Indonesia is "To become a superior, trusted insurance company and create sustainable added value for stakeholders." Dan the mission, includes: One, Optimizing the company's value sustainably. Two, Creating customer satisfaction through excellent insurance services. Three, Developing the capabilities and competencies of human resources to become professional, competitive, and caring people.

Four, Empowering the company to become a world-class insurance company and become the pride of the Indonesian nation. From the results of this definition, a business value chain is designed (see Figure 2) which describes the main activities and supporting activities of the planned business process.

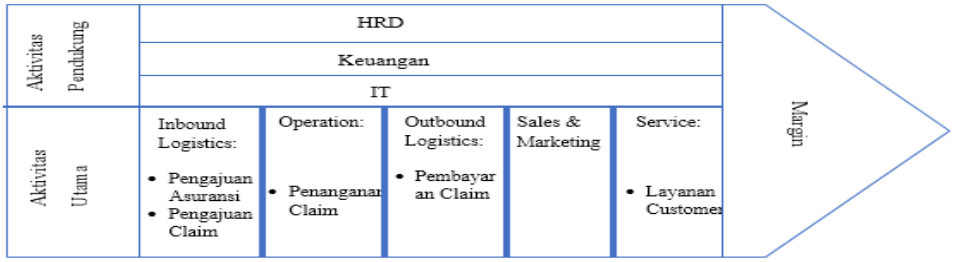


Figure 2. Value Chain Design

In the initial design of this business process analysis, the AE design was prepared based on the needs of the existing business processes in the company, which consist of main activities (insurance submission and claims, claims handling, claims payments, insurance promotions and customer service) and supporting activities (HRD management, finance and IT support).

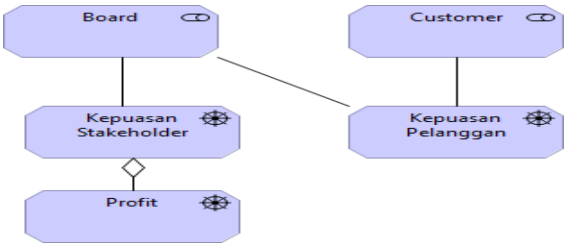


Figure 3. Stakeholder View

2. Vision Architecture

In this phase, development is carried out by determining the scope, boundaries, and objectives of enterprise architecture, because the previous design (SITAP) did not have an architectural vision, so it is necessary to design a business process consisting of the main business needs based on the main business objectives and architectural principles. If we look at stakeholder satisfaction and customer satisfaction in accordance with the company's vision and mission (see Figure 3), it is necessary to design a business objective based on the level of stakeholder satisfaction related to the profit expected by the company (see Figure 4).

Driver profit aims to reduce costs and increase revenue through increasing data accuracy so that reduction of work repetition can be avoided and increase satisfaction which will then have an impact on increasing sales which will increase revenue. Therefore, to increase data accuracy, an integrated system and one system are needed to store each data element in order to reduce maintenance costs (see Figure 5).

Email Corresponding: maulindita11@gmail.com

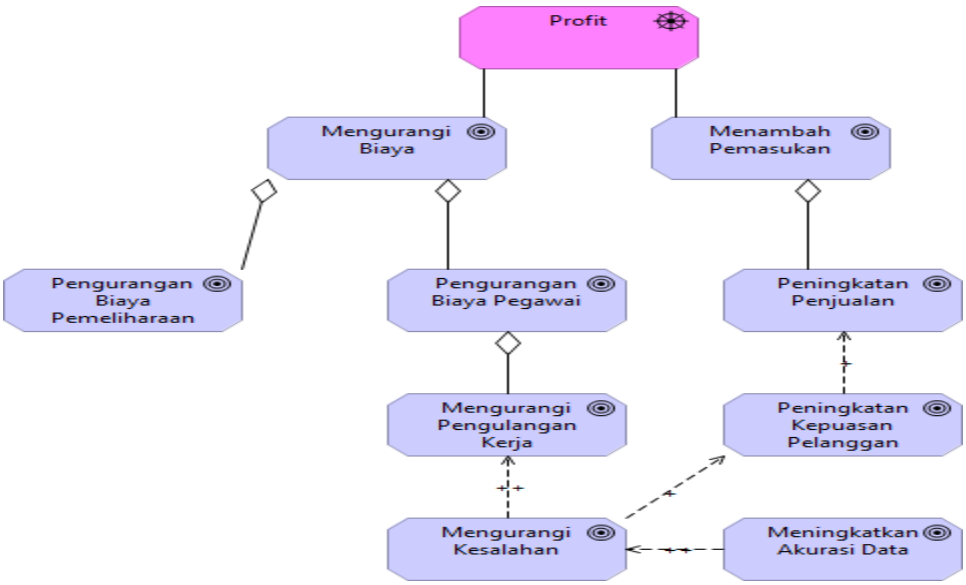


Figure 4. Business Objectives Related to Profit Drivers

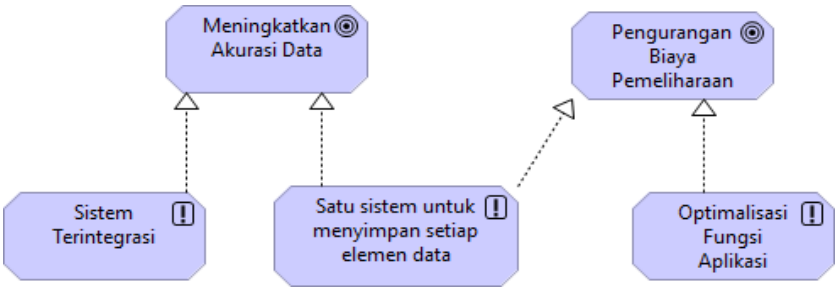
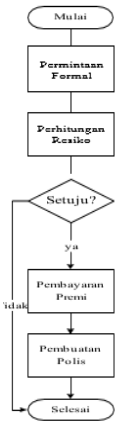


Figure 5. Principle View of Business Process

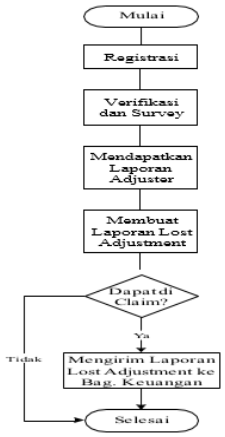
3. Business Architecture

In this phase, baseline architecture analysis is carried out through business function, business use case, business process, organizational decomposition, and actor co-operation viewpoint. The initial step of baseline architecture is to explain the business processes that are currently running in the company through a system flowchart for each business activity (See Figure 6).

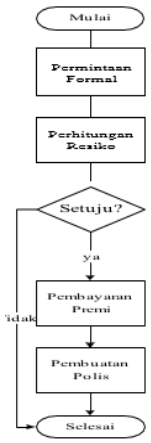
Insurance Submission



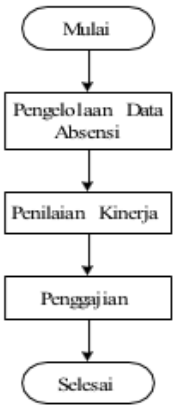
Insurance Claims



Insurance Handling

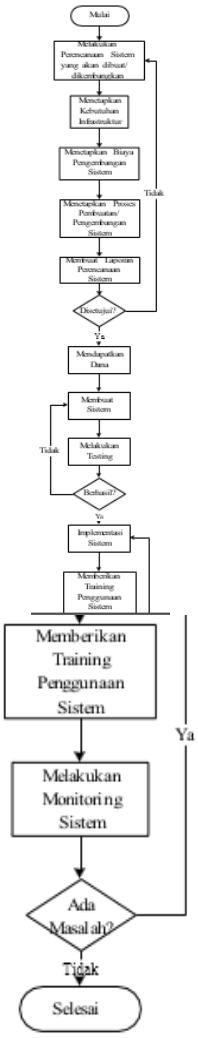


HRD



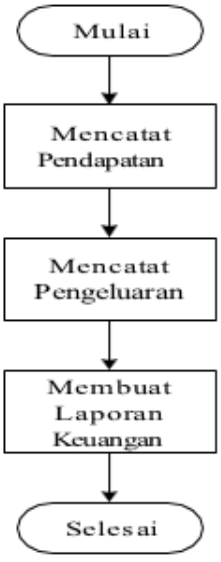
Financial Budget

IT



Promotion

Financial Statements



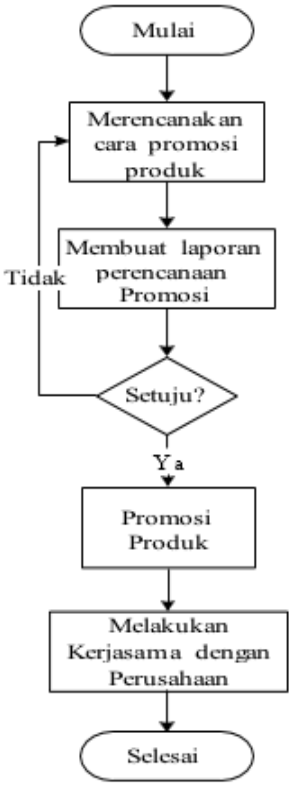


Figure 6. Flowchart of the Business Flow of the Running System

The next stage of this design is to create business functions consisting of main business functions and supporting business functions. In developing business functions, the development team uses the ArchiMate tools (see Figure 7) starting from Business Function Level 0 to Level 2.

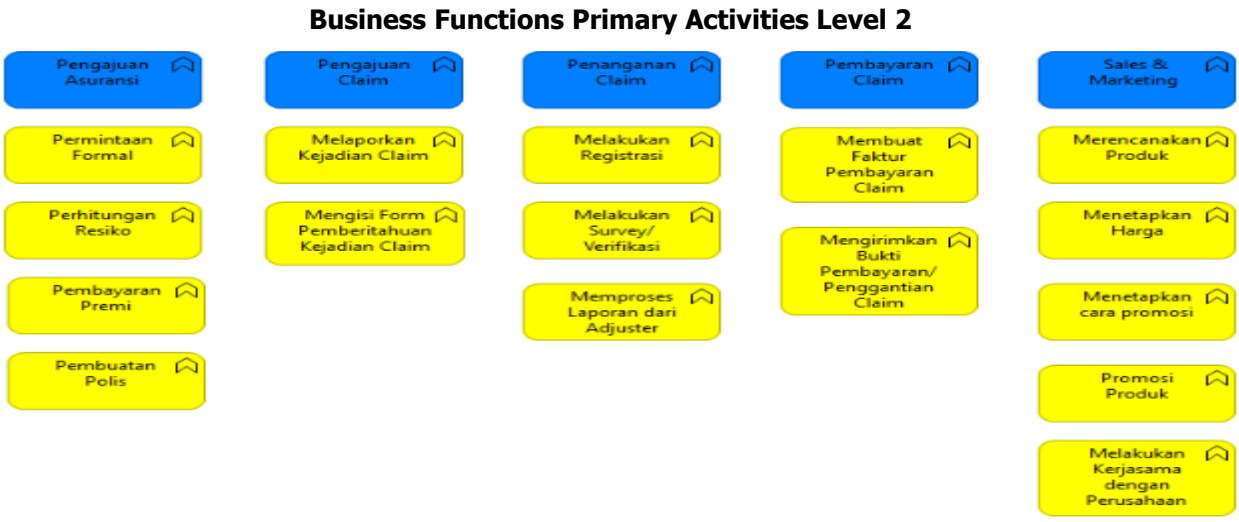


Figure 7. Business Function Design Primary and Support Activities Level 2

Next, create a design for actor placement according to the activities carried out by the actor, which will be described using the organization viewpoint (see Figure 8).

Figure 8. Organization Viewpoint

4. Information System Architecture

In this phase, two architectures will be explained, namely data architecture and application architecture. The customer data architecture design is related to insurance application data, policies, and claims. Customer data is obtained from the Insurance Closing Application Form (FPPA). Claim data is obtained from the claim event notification form which is then processed into a lost adjustment report. Financial data is related to payment data, expenses, income, budget, salary, and financial reports. Payment data is obtained from insurance application data, namely in premium payments, and claim data, namely in claim payments. Budget data is related to promotion data and promotion data is related to sales and marketing data. Salary data is related to employee data and employee data is related to HRD. Employee data is obtained from application data, work contracts, absences and performance. The data architecture design can be seen in Figure 9.

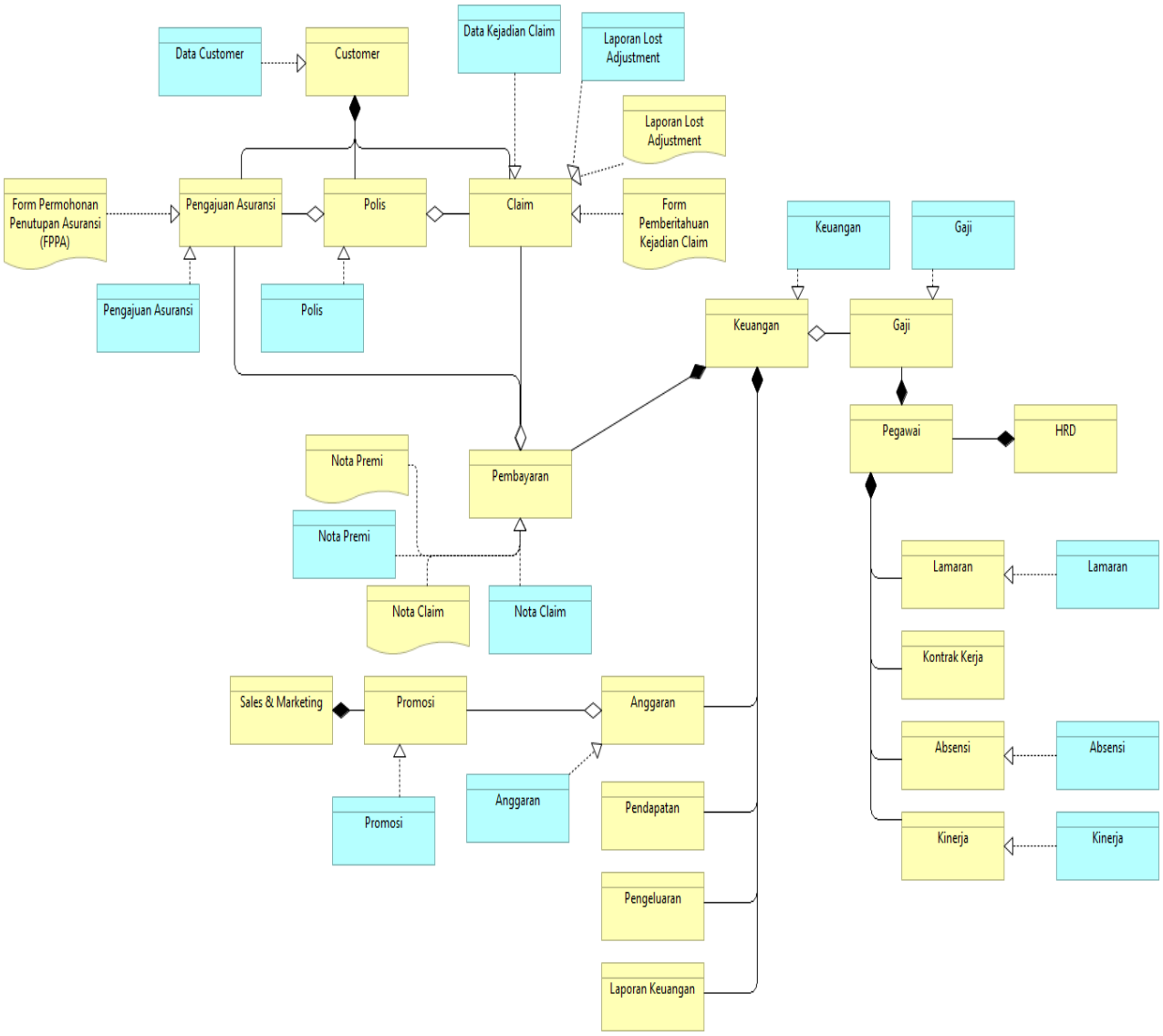


Figure 9. Collection of Community Service System Activity Diagram Designs

Next is the application architecture design stage supporting one or more business processes that will be represented using the application usage viewpoint (See Figure 10). This design will involve insurance submission, claim submission, claim handling, claim payment, promotion, HRD, finance and IT.

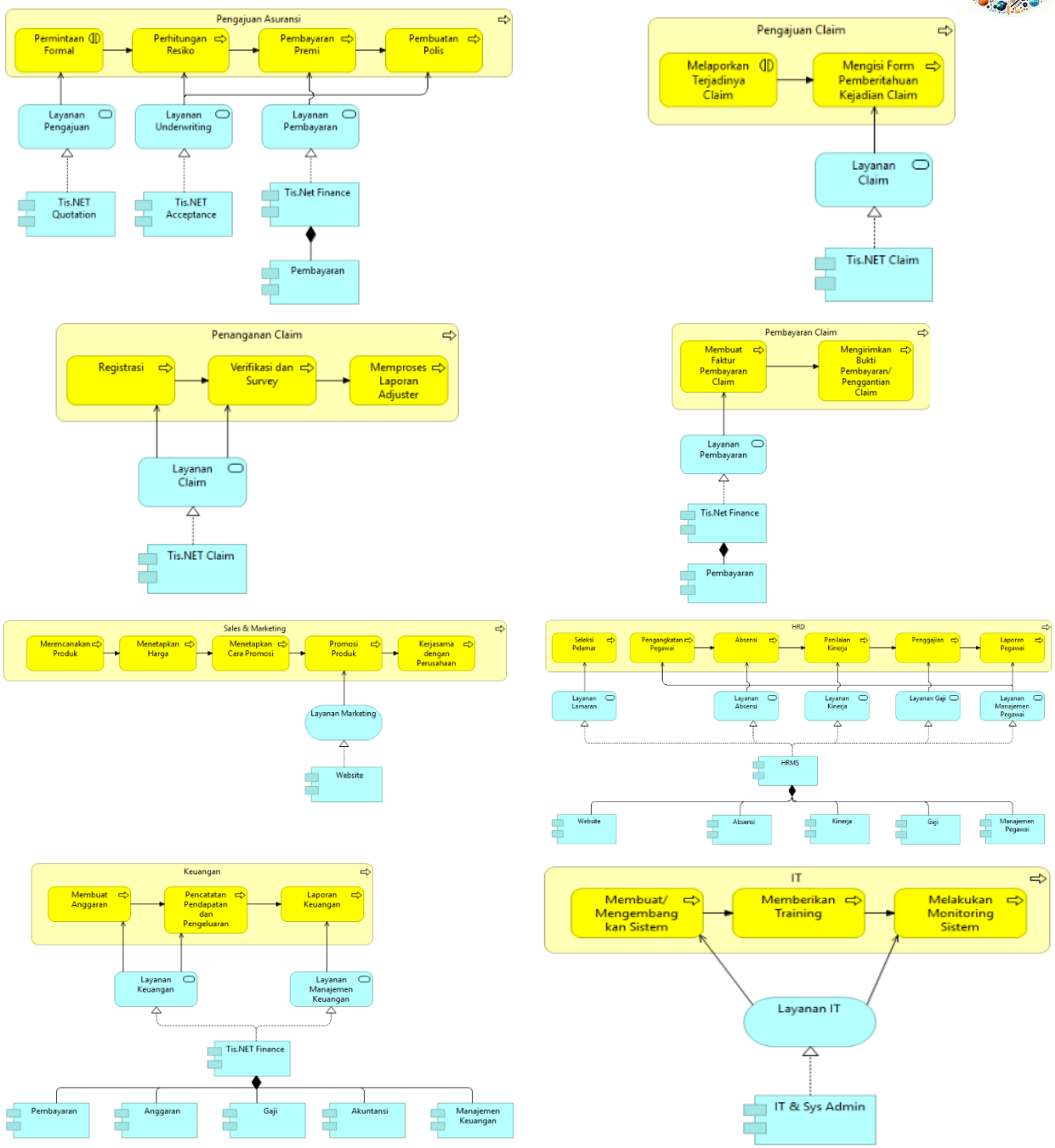


Figure 10. Application Usage Viewpoint Business Activity Design

Next, the communication application design is carried out to describe all models and mappings related to communication between applications being designed (see Figure 11). In the front office there is only 1 application, namely the TPI website. While in the back office there are 7 applications, namely the Tis.Net Quotation application, Tis.Net Claim, Tis.Net Acceptance, Attendance, Performance, Employee Management, and Tis.Net Finance, where Tis.Net Finance has 4 modules, namely payment, accounting, salary, and financial management.

Email Corresponding: maulindita11@gmail.com

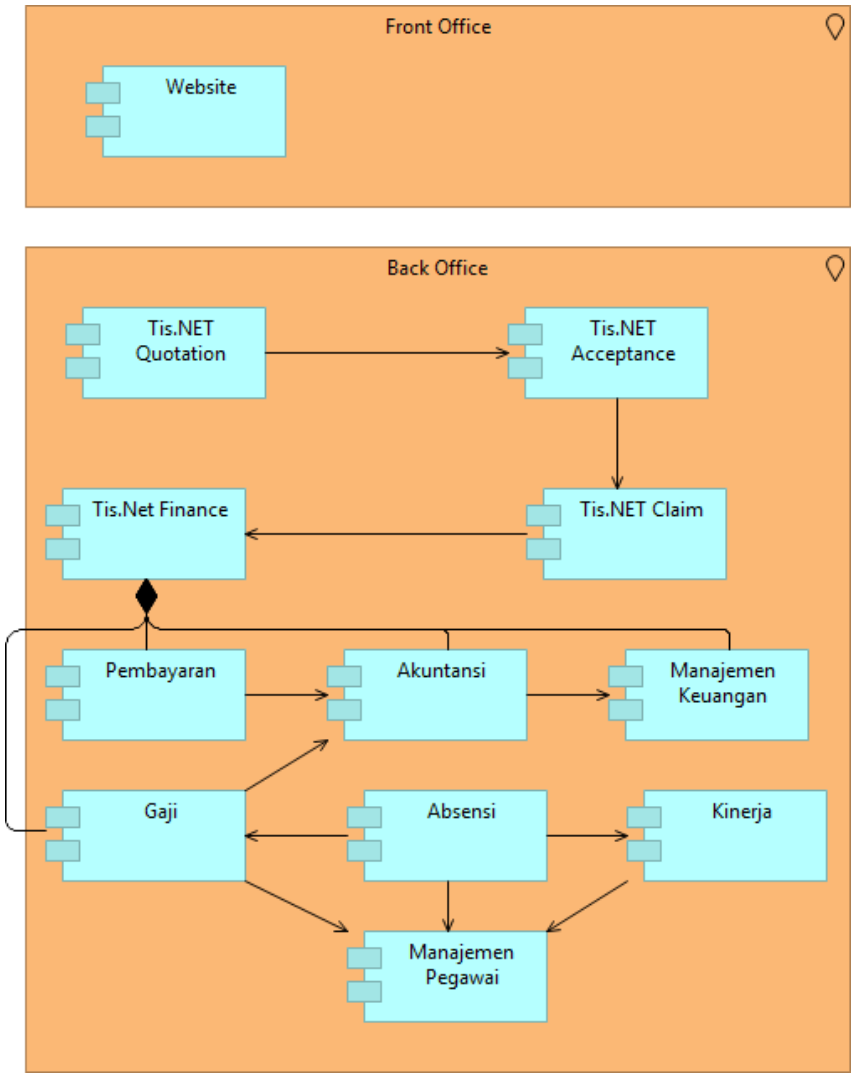


Figure 11. Baseline Application Co-operation Viewpoint

5. Technology Architecture

In this phase, the baseline architecture technology is described and explained with its target architecture technology (see figure 12). The technology architecture at PT Tugu Pratama is currently done by connecting several devices using LAN as a data exchange. LAN is connected to a server farm consisting of a file server, database server, email server, and web server. Where the file server is used to manage documents, the database server is used to manage data, the email server is used to manage email, and the web server is used to manage the website. TPI has used a firewall as a computer network security system. PT Tugu Pratama has 5 branches located in Surabaya, Bandung, Medan, Balikpapan, and Semarang. Data exchange is done using an internet connection. The entire system is centralized at the head office in Jakarta.

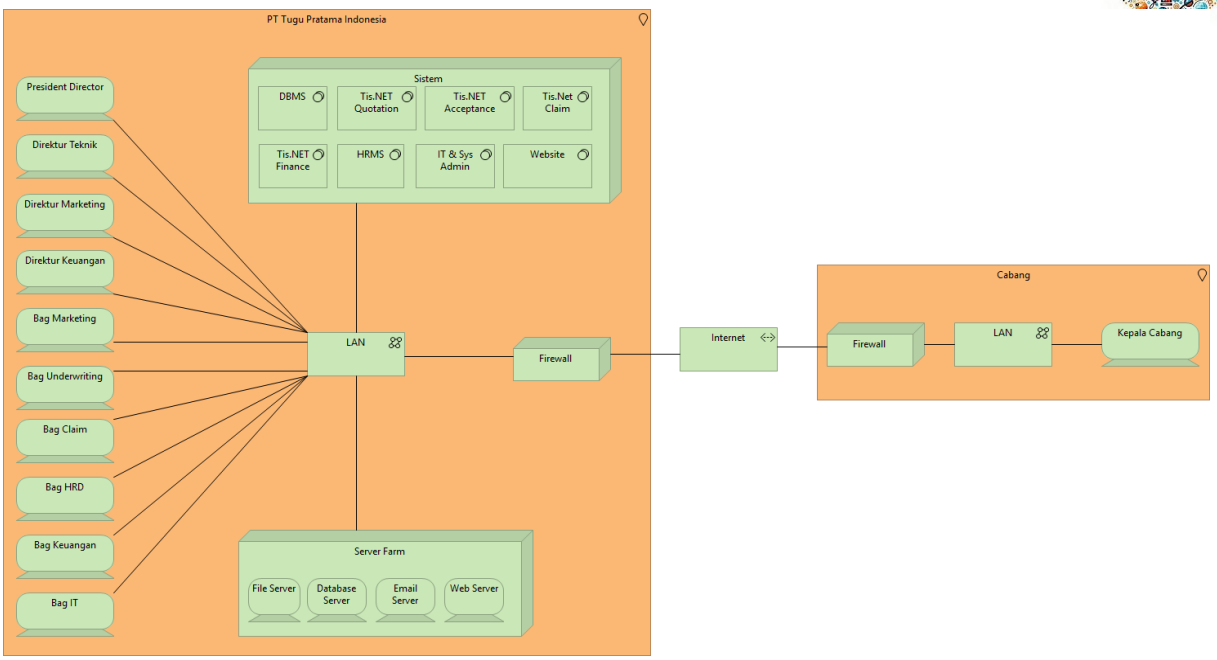


Figure 12. Infrastructure Viewpoint Design

6. Business Architecture Gap Analysis

At the front office there is only a Tugu website that contains information about PT Tugu Pratama Indonesia, the company's vision and mission, and information about the company's products. The website is not connected to Tis.Net because the business process is based on corporate based, not retail based. While for the back office will run several business processes related to insurance, such as claim submission, insurance registration, etc. (See Figure 13).

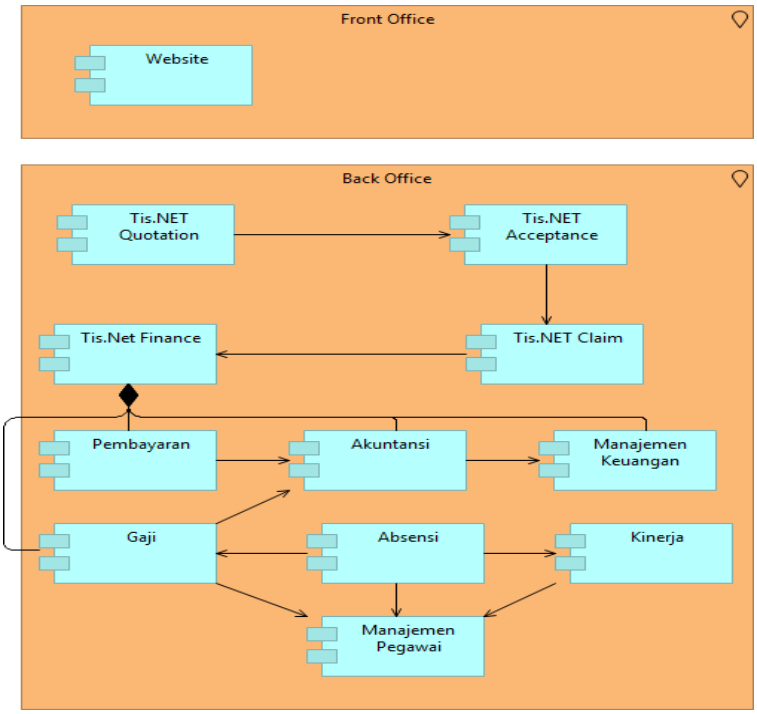


Figure 13. Application Architecture Gap Analysis

Next, for the data architecture gap analysis, the data in yellow is the data contained in the business process, while the data in blue is the data contained in the application and is the target data architecture (see Figure 14).

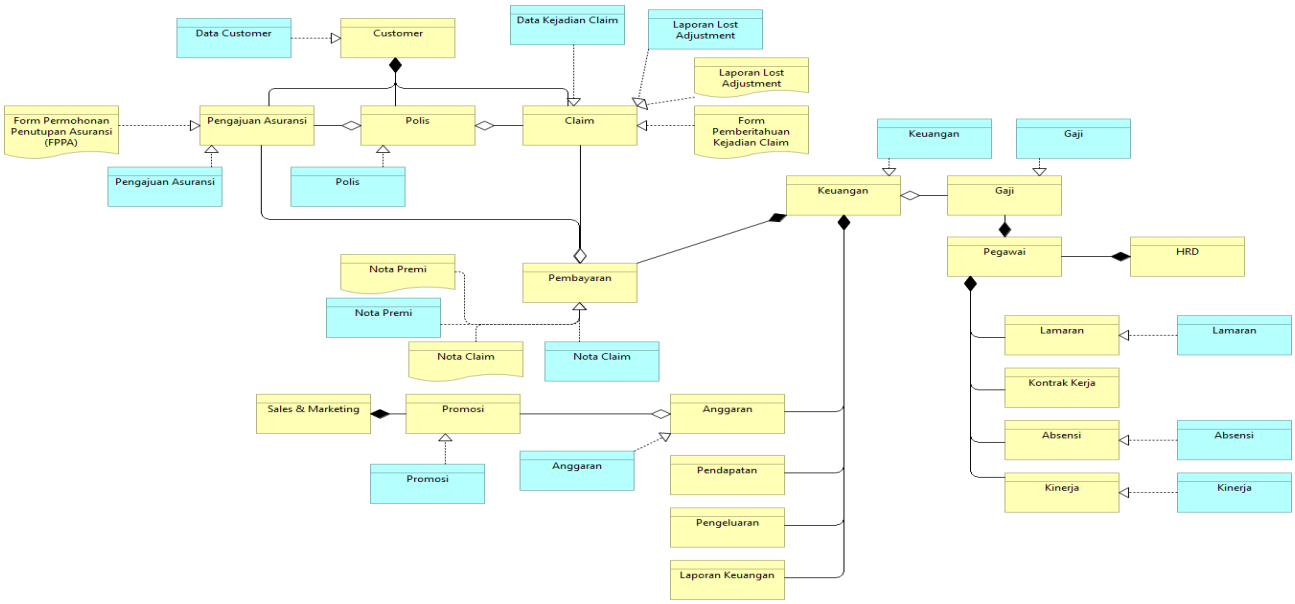


Figure 14. Data Architecture Gap Analysis Design

Lastly for the technology architecture gap analysis. The green colored devices are devices that are in the baseline and target, while the gray colored devices are devices that are only in the target technology architecture (see figure 15).

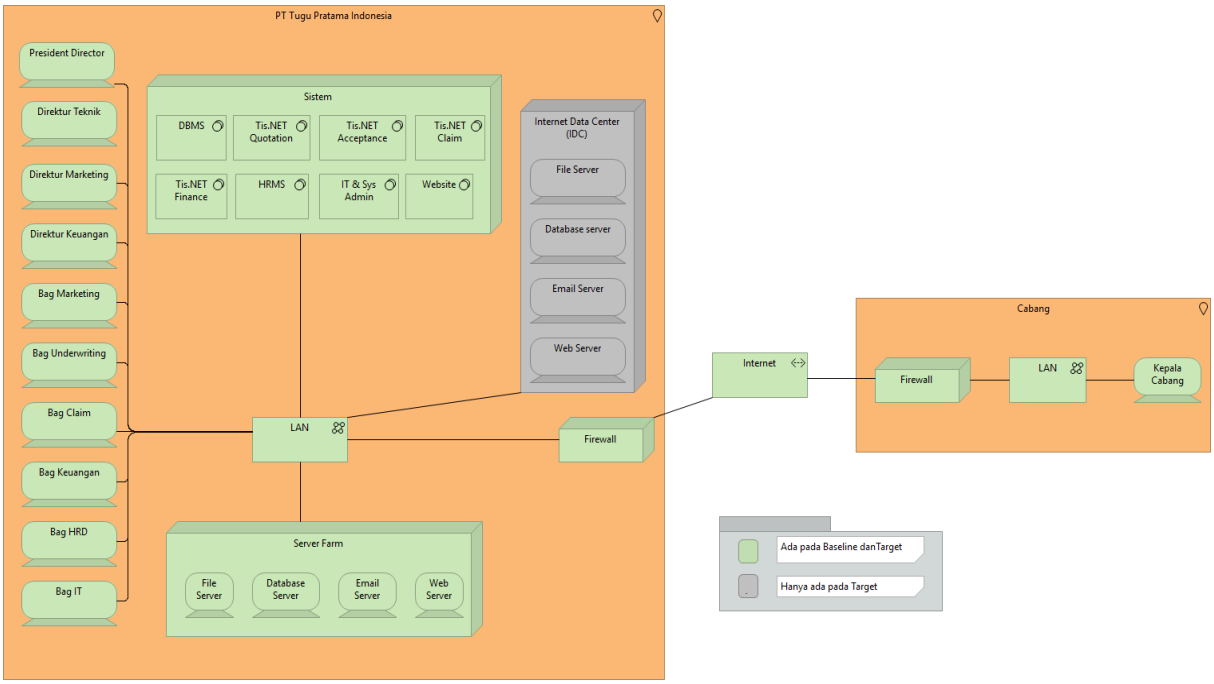


Figure 15. Technology Architecture Gap Analysis

5. Discussion

The Architecture Enterprise (AE) design using the TOGAF ADM (Architecture Development Method) framework for insurance companies must be designed by considering the complexity of the insurance industry involving many stakeholders, strict regulations, and the need for high data security. In the Preliminary Phase, companies need to define a clear strategic vision and objectives, and identify key stakeholders such as regulators, customers, and business partners. In addition, companies must develop a strong governance framework to ensure compliance with industry regulations, such as Personal Data Protection (PDP) and information security standards. This stage also includes an assessment of the business environment, including market trends, competition, and technological challenges, to ensure that the architecture design built can support adaptability and innovation.

Next, starting from the Architecture vision stage to the information technology stage, insurance companies need to map core business processes such as underwriting, claims, risk management, and customer service. This aims to identify areas that require optimization or digitalization, such as the use of big data technology for risk analysis or AI for personalization of insurance products. In addition, companies must ensure that the designed business architecture can support efficient and secure system integration, as well as meet customer needs for fast and reliable services. With a structured TOGAF ADM approach, insurance companies can create an architecture that is scalable, secure, and focused on increasing customer value and operational efficiency, while ensuring compliance with applicable regulations.

6. Conclusion

The Architecture Enterprise (AE) design using the TOGAF ADM framework for insurance companies is that this approach provides a comprehensive and directed structure for developing architectures that are aligned with business objectives, technology needs, and industry regulatory demands. Through the TOGAF ADM stages, insurance companies can define a clear vision and strategy, map core business processes, and integrate technologies that support innovation and operational efficiency. In addition, this design ensures that data security, regulatory compliance, and customer experience are top priorities. Thus, insurance companies can build architectures that are scalable, flexible, and able to adapt to market dynamics and technological developments, while increasing competitiveness and providing added value to customers.

This research is expected to provide several practical benefits for companies, for example: company management can identify and map inefficient business processes such as underwriting, claims, or risk management processes. This allows companies to optimize and automate processes, thereby reducing operational costs and increasing service speed.

Although the Architecture Enterprise (AE) research design using the TOGAF ADM (Architecture Development Method) framework offers many benefits for insurance companies, there are several limitations that need to be considered, for example: First, TOGAF ADM is a comprehensive framework and requires a long time to be fully implemented. Second, TOGAF ADM requires a team that has special expertise in enterprise architecture and a deep understanding of the framework.

Acknowledgments

-

References

1. Abubakre, M., Zhou, Y., & Zhou, Z. (2022). The impact of information technology culture and personal innovativeness in information technology on digital entrepreneurship success. Information Technology & People, 35(1), 204-231.
2. Abunadi, I. (2019). Enterprise architecture best practices in large corporations. Information, 10(10), 293.
3. Amalia, E., & Supriadi, H. (2017, June). Development of enterprise architecture in university using TOGAF as framework. In AIP Conference Proceedings (Vol. 1855, No. 1). AIP Publishing.
4. Bhattacharya, P. (2018). Aligning enterprise systems capabilities with business strategy: An extension of the strategic alignment model (SAM) using enterprise architecture. Procedia computer science, 138, 655-662.
5. Boh, W. F., & Yellin, D. (2006). Using enterprise architecture standards in managing information technology. Journal of Management Information Systems, 23(3), 163-207.
6. Espinosa, J. A., Boh, W. F., & DeLone, W. (2011, January). The organizational impact of enterprise architecture: a research framework. In 2011 44th Hawaii international conference on system sciences (pp. 1-10). IEEE.
7. Ettahiri, I., Doumi, K., & Zellou, A. (2022, November). Towards a dynamic model of business IT alignment using enterprise architecture: a comparative study. In International Conference on Advanced Intelligent Systems and Informatics (pp. 707-720). Cham: Springer International Publishing.
8. Fu, Q., Abdul Rahman, A. A., Jiang, H., Abbas, J., & Comite, U. (2022). Sustainable supply chain and business performance: The impact of strategy, network design, information systems, and organizational structure. Sustainability, 14(3), 1080.
9. Mehmood, T. (2021). Does information technology competencies and fleet management practices lead to effective service delivery? Empirical evidence from e-commerce industry. International Journal of Technology, Innovation and Management (IJTIM), 1(2), 14-41.
10. Pulkkinen, M., & Hirvonen, A. (2005, January). EA planning, development and management process for agile enterprise development. In Proceedings of the 38th annual Hawaii international conference on system sciences (pp. 223c-223c). IEEE.
11. Rouhani, B. D., Mahrin, M. N. R., Nikpay, F., Ahmad, R. B., & Nikfard, P. (2015). A systematic literature review on Enterprise Architecture Implementation Methodologies. information and Software Technology, 62, 1-20.
12. Saleem, F., & Fakieh, B. (2020). Enterprise architecture and organizational benefits: A cASE sTUDY. Sustainability, 12(19), 8237.
13. Saputra, H., Gustiana, I., & Soeryanto Soegoto, E. (2022). Design of enterprise information system using TOGAF framework for public service agency. Journal of Engineering Science and Technology, 17(4).
14. Setyowati, W., Widayanti, R., & Supriyanti, D. (2021). Implementation of e-business information system in indonesia: Prospects and challenges. International Journal of Cyber and IT Service Management, 1(2), 180-188.
15. Suseno, Y., & Abbott, L. (2021). Women entrepreneurs' digital social innovation: Linking gender, entrepreneurship, social innovation and information systems. Information Systems Journal, 31(5), 717-744.
16. Ulmi, U., Putra, A. P. G., Ginting, Y. D. P., Laily, I. L., Humani, F., & Ruldeviyani, Y. (2020, July). Enterprise architecture planning for enterprise university information system using the TOGAF architecture

development method. In IOP Conference Series: Materials Science and Engineering (Vol. 879, No. 1, p. 012073). IOP Publishing.

17. Van der Raadt, B., Bonnet, M., Schouten, S., & Van Vliet, H. (2010). The relation between EA effectiveness and stakeholder satisfaction. Journal of Systems and Software, 83(10), 1954-1969.
18. Ward JM, Peppard J. 2002. Strategic Planning for Information Systems. 3th ed. United Kingdom (UK): J Wiley.
19. Yurisca, B. D., Kevin, C., Agustinus, C., & Adrian, P. (2020). Design enterprise architecture in forwarding company using togaf method. International Journal of Open Information Technologies, 8(8), 79-83.