

**JURNAL TUGAS AKHIR UNIVERSITAS TELKOM
PERANCANGAN ENTERPRISE ARCHITECTURE PADA FUNGSI KEPEGAWAIAN YOGYA
GROUP DENGAN MENGGUNAKAN TOGAF ADM**

**JOURNAL OF FINAL PROJECT UNIVERSITAS TELKOM
ENTERPRISE ARCHITECTURE DESIGN IN YOGYA GROUP STAFFING FUNCTION USING
TOGAF ADM**

Fadel Muhammad Rizki Izhari¹, Rd Rohmad Saedudin, S.T. MT.², Berliana Maulidya Izzati, S.KOM., M.KOM³

^{1,2,3} Prodi S1 Sistem Informasi, Fakultas Rekayasa Industri, Universitas Telkom

¹fadelmuhammadrizkiizahari@student.telkomuniversity.ac.id, ²rd.rohmadsaedudin@telkomuniversity.ac.id,
³berlianmi@telkomuniversity.ac.id

Abstrak

Yogya Group adalah perusahaan ritel Indonesia modern. Yogya Group adalah perusahaan ritel dengan format Supermarket dan Department Store. Gerai-gerai ini umumnya menjual berbagai produk makanan, minuman dan keperluan lainnya. Lebih dari 200 produk makanan dan kebutuhan hidup lainnya tersedia dengan harga bersaing, memenuhi kebutuhan sehari-hari konsumen, terutama bagi masyarakat Jawa Barat, Jawa Tengah, dan sekitarnya. Untuk menyelaraskan aset dengan Yogya Group memerlukan desain arsitektur di perusahaan yang menggunakan TOGAF ADM. upaya untuk memaksimalkan strategi bisnis, kegiatan bisnis, dan menyelaraskan aset Grup Yogya, memerlukan desain arsitektur perusahaan. Dalam mendesain arsitektur perusahaan di Yogya Group, kerangka kerja TOGAF (kerangka kerja arsitektur kelompok terbuka) dan menggunakan metode TOGAF ADM dengan tujuh fase desain, yaitu, fase awal, visi arsitektur, arsitektur bisnis, arsitektur sistem informasi, arsitektur teknologi, peluang dan solusi, dan perencanaan migrasi. Hasil mendesain arsitektur perusahaan dengan metode TOGAF ADM akan menghasilkan gambaran terperinci untuk membantu perusahaan mendefinisikan kebutuhan bisnis yang diperlukan untuk menyelesaikan masalah. Selanjutnya, cetak biru dan Roadmap TI akan dibuat yang akan digunakan sebagai referensi dalam membangun sistem yang terintegrasi, terutama dalam fungsi produksi di Perusahaan Industri dan Manufaktur. Terutama di divisi karyawan yang diawasi langsung oleh HRD dan PDD, yang bertanggung jawab untuk pengumpulan data semua data termasuk masalah data karyawan yang terjadi dalam fungsi ini adalah Sebagai contoh dalam manajemen data karyawan, rekap data karyawan, cuti pengarsipan masih manual. Oleh karena itu, diperlukan perancangan Enterprise Architecture (EA) yang diharapkan dapat memfasilitasi dan memberikan solusi terhadap kegiatan bisnis yang dilakukan dan pengelolaan data fungsi SDM.

Keywords: Enterprise Architecture, Retail, Blueprint, IT Roadmap, Yogya Group, TOGAF ADM, Employee Division.

Abstract

Yogya Group is a modern Indonesian retail company. Yogya Group is a retail company with a Supermarket and Department Store format. These outlets generally sell a variety of food products, beverages and other necessities. More than 200 food products and other necessities of life are available at competitive prices, meeting the daily needs of consumers, especially for the people of West Java, Central Java and surrounding areas. To align assets with Yogya Group requires architectural design in companies using TOGAF ADM. an effort to maximize business strategies, business activities and align assets of Yogya Group, it requires the design of enterprise architecture. In designing an enterprise architecture in Yogya Group, TOGAF framework (the open group architecture framework) and uses the TOGAF ADM method with seven design phases, namely, preliminary phase, architecture vision, business architecture, information system architecture, technology architecture, opportunities and solutions, and migration planning. The results of designing enterprise architecture with the TOGAF ADM method will produce a detailed picture to help companies define the business needs needed to solve problems. Furthermore, a blueprint and IT Roadmap will be created which will be used as a reference in building an integrated system, especially in the production function in Industrial and Manufacturing Companies. Especially in the employee division which is supervised directly by HRD and PDD, who is responsible for data collection all data including employee data problems that occur in this function are For example in employee data management, employee data recap, filing

leave is still manual. Therefore, it is necessary to design Enterprise Architecture (EA) which is expected to facilitate and provide solutions to business activities carried out and management of HR function data.

Keywords: Enterprise Architecture, Retail, Blueprint, IT Roadmap, Yogya Group, TOGAF ADM, Employee Division.

1. Preliminary

Information Technology (IT) is very important for life. Technology has helped the human lifestyle with all the conveniences offered. With the rapid development of technology, companies are also required to follow the technology and utilize technology to improve the quality of the company. IT has an important role to support business processes in the company. IT and business must have strategies that are interrelated to one another to achieve company goals. It is the obligation of companies that develop or advance to create effective long-term information.

YOGYA GROUP is a retail company with a Supermarket and Department Store format. These outlets generally sell a variety of food products, beverages and other necessities. More than 200 food products and other necessities of life are available at competitive prices, meeting the daily needs of consumers, especially for the people of West Java, Central Java, and surrounding areas. The Yogya Group has used information technology in number of business processes but has not yet run optimally because there is no alignment between the technology used and business needs. These problems cause difficulties in data management that is not yet automated, resulting in business activities.

Especially in the employee division which is supervised directly by HRD and PDD, who is responsible for data collection all data including employee data problems that occur in this function are For example in employee data management, employee data recap, filing leave is still manual. Therefore, it is necessary to design Enterprise Architecture (EA) which is expected to facilitate and provide solutions to business activities carried out and management of HR function data. Where in designing EA, an architecture framework is needed to develop a broad scope of discussion of various architectures including business, data, applications, and technology. TOGAF ADM has several stages consisting of Initial Phase, Architectural Vision, Business Architecture, Information Systems Architecture, Technology Architecture, Opportunities and Solutions, Migration Planning, Implementation of Governance and Management of Architecture Change. In designing the EA that will be made in this study only reached the Migration Planning stage.

2. Basic Theory

2.1 The Open Group Architecture Framework (TOGAF ADM)

A key element of The Open Group Architecture Framework (TOGAF) is the Architecture Development Method (ADM) which gives a specific view to the enterprise architecture development process (Urbaczewski & Mrdalj, 2006). ADM is an important feature that allows companies to explain business needs and build specific architectures to meet those needs. Architecture Development Method (ADM) consists of several stages needed to build an enterprise architecture, several stages of the Architecture Development Method (ADM) shown in the figure below

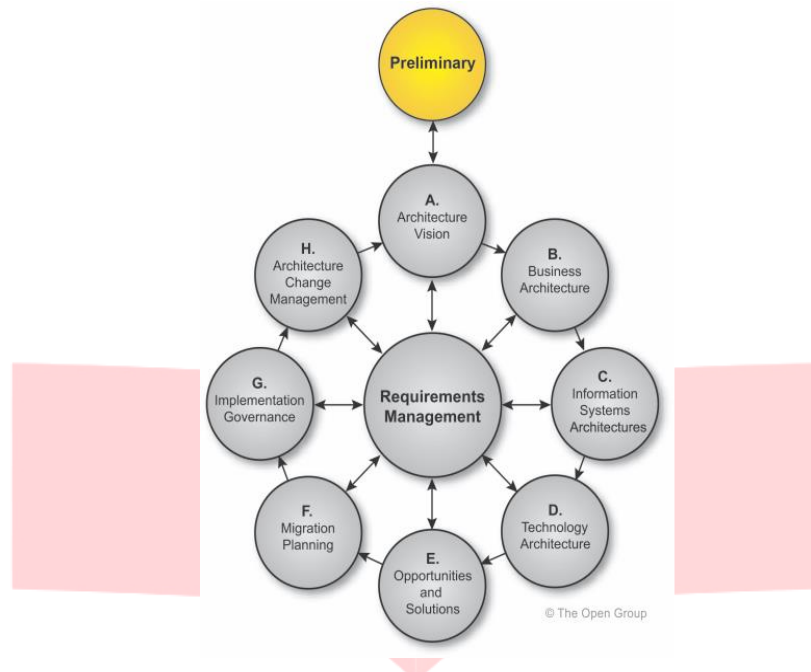


Figure 1 ADM Cycle (The Open Group, 2011)

2.2 Benefits of Enterprise Architecture

The benefits of using EA are through direct and indirect contributions to achieving organizational goals. Other advantages regarding the use of EA can be seen below:

1. Organizational Design - EA proves that support in the fields related to the design and redesign of the organizational structure during merging, acquisition or making general changes in the organization.
2. Organizational Processes and Standard Processes - EA helps enforce discipline and standardize business processes and enables the process of consolidation, reuse and integration to begin.
3. System Development - EA optimally contributes to system design and power allocation efficiency during system development and testing takes place.
4. IT Management and Decision Makers - EA can help enforce discipline and standardize the plans that have been made and can contribute to reducing time for technology-related decision making.
5. IT Value - EA helps reduce system implementation and operational costs, and minimizes plagiarism from infrastructure services in all business units.
6. IT complexity - EA contributes to reducing IT complexity, data and application consolidation, and better interoperability of the system.
7. IT Openness - EA contributes to being more open and responsive to IT as reflected in increased access to data, as well as increasing transparency in infrastructure changes.
8. IT Risk Management - EA contributes to reducing the risk of system failure and security violations.

2.3 ADM approach to TOGAF

Architecture Development Method (ADM) provides processes for building architecture that includes the development of an architectural framework. All these activities are carried out in an iterative and sustainable cycle, which allows organizations to carry out controlled enterprise transformations in response to business goals and opportunities. (Desfray, Modeling Enterprise Architecture with TOGAF, 2014)

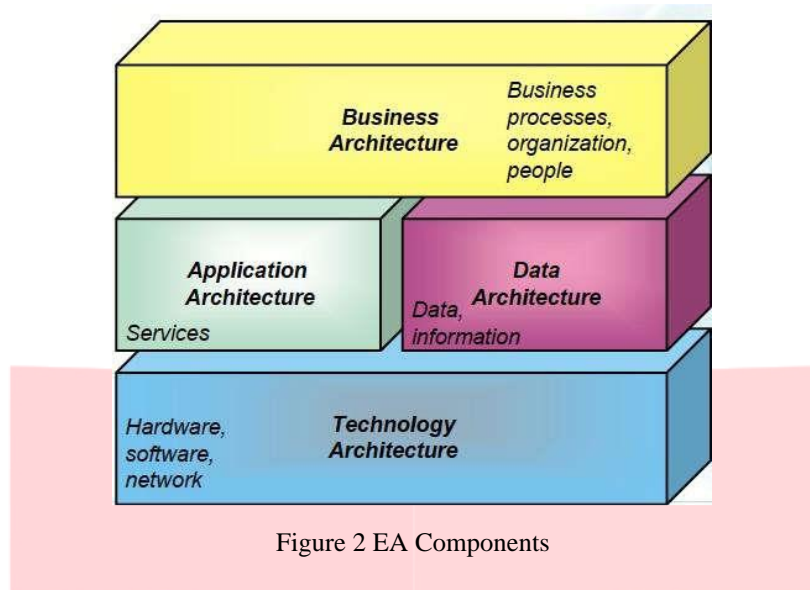


Figure 2 EA Components

3. Conceptual Model

Conceptual level and conceptual framework aim to identify the essence of the research objectives and their connections (Hevner & Chatterjee, 2010). The framework for building conceptual models for Final Project problems (TA) in Information Systems study programs can use the paradigm of design science and behavior science (Hevner, Ram, March, & Park, 2004); (Becker, Niehaves, & Janiesch, 2010).

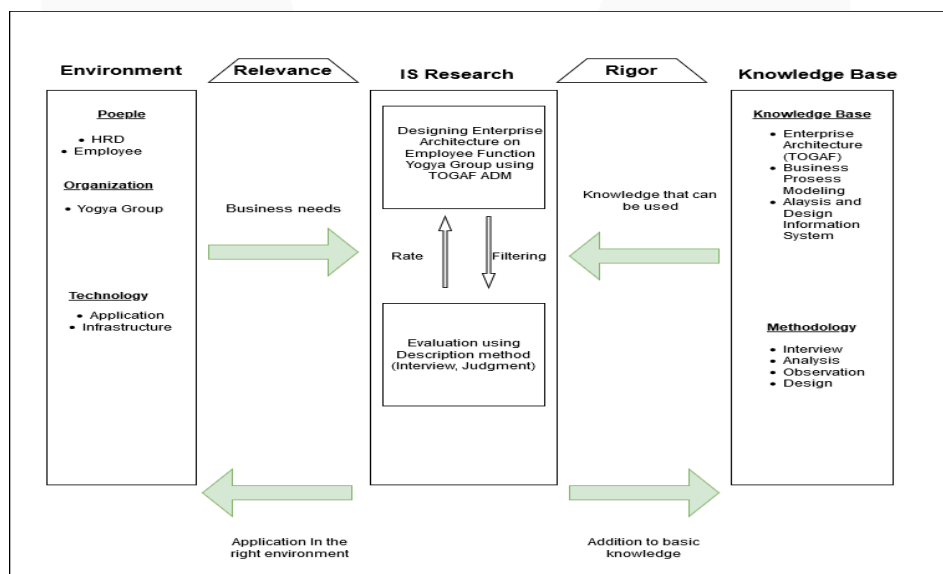


Figure 3. Conceptual Research Model

In Figure 2 IS Research Framework there are three concepts beginning with the Environment that will influence the IS research development needed when identifying problems and being the basis of research to be done, Environment covers the business needs of research to have three processes namely people, Organization, Technology. In this research, people are related to the people in the organization itself, HRD and Employee. Organization is Yogya group, while Technology is related to application, infrastructure.

IS Research concept an illustration and also development of the Designing Enterprise Architecture on Employee functions of Yogya Group using Togaf ADM, to support research. Knowledge Base describes the knowledge that must be possessed to support research and produce accurate data which consists of Enterprise Architecture (TOGAF), Business Process Modeling, Analysis and Design Information System and Methodology which consists of interviews, analysis, observation, design.

4. Result

4.1 Principle Catalog

Principle catalog is describing the condition of the company's vision, mission. and describe good solutions for evaluating business needs. Principle catalog consists of principles of business architecture, data architecture, application architecture.

Table 1 Table Principle Catalog

No	Architecture	Principle	Description
1	Business Architecture	Excels in business services providing quality products.	Provide welfare to employees, in accordance with regional regulations, provide incentives for employees who work more than the working hours limit, provide employee wages in accordance with the level of education and position, and provide rewards for employees whose work period is over
		Provide welfare to employees, in accordance with regional regulations, provide incentives for employees who work more than the working hours limit, provide employee wages in accordance with the level of education and position, and provide rewards for employees whose work periods are finished	The holding of job training for employees who need to improve the performance of the performance, provides a kind of certification training for example MS office certification
		Improving IT-based HR operations	Applying technology and applications that can support the process of managing and operating human resources at the company such as application-based leave submission, attendance applications, employee data recap applications and employee letter assignments
2	Data Architecture	Data Integration	Existence of data integration between users with other users to support business processes
		Data Assets	Data is an important asset for the Human Resources division that needs to be managed well and kept confidential

		Data Security	Maintaining data security so that data is not easily accessed
		Data can be accessed	Data can be accessed by interested parties of PT Akur Pratama Yogya especially the Human Resources division particular to carry out its functions
3	Aplikasi Arsitektur	Application availability	Applications used in organizations are connected to one another
		Usefulness of the application	Available applications can be useful and in accordance with company needs
		Integrasi aplikasi	Applications that companies use are interconnected
4	Teknologi Arsitektur	Technology Security	Using quality and safe technology
		Standardized technology	Standardized technology used by organizations must have standards
		Sustainable technology	Technology used by companies can be developed in accordance with company needs and business processes

4.2 Architecture Vision

Architecture vision aims to define the scope, business goals, organizational profile, organizational structure, identification of stakeholders, vision and mission of the organization and obtaining approval, as well as mapping all strategies to be carried out.

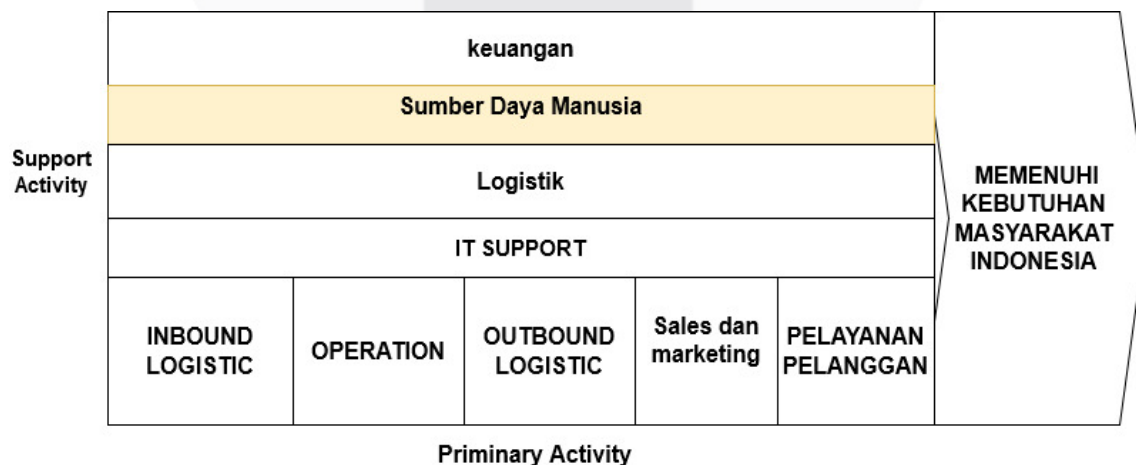


Figure 4 Value Chain

Primary Activity

1. Inbound logistic (product presentation)
2. Operation (provide superior service to customers or the community, meet the needs of customers or public)
3. Outbound logistic (delivery goods on time)
4. Sales and marketing
5. Customer service.

Support Activity

1. Finance
2. Human resources
3. Logistics
4. IT support

4.3 Business Architecture

Table 1 . Business Architecture

Goal	Objective	Requirement
Increasing the role of technology and maximizing staffing administrative services to be superior	Staffing administration services for the survival of the company	Administration of leave applications, official travel and employee recruitment, employee rotation, promotion and absenteeism according to existing operational standards can be carried out properly.
	Guaranteeing the effectiveness of employee administration processes.	Employee administration processes must be based on operational standards in accordance with the needs of the company and the interests of employees.
	Optimizing the role of technology for administrative service processes	Facilitate the staffing division to find out the number of leave from employees, absence of official travel and the implementation of employee recruitment.
		Improving the administrative services process to be more efficient and improving the administration of all human resources working in the company

4.4 Information System Architecture

Information System Architecture is the phase of analysis and design of information systems from enterprise architecture. Information system architecture consists of two main architectures, namely data architecture and application architecture. Data Architecture analyzes and designs targets or proposals for data architecture and application architecture analyzes and designs targets or proposals for applicat

4.5 Data Architecture Requirement

Data architecture requirements needed for data architecture design can meet existing data requirements. Existing data requirements are based on Table 3 Principle Catalog in the preparation phase before starting the analysis and design of an enterprise architecture

Table 2. Data Architecture Requirement

No	Data Requirement
1	There is data integration to support the effectiveness of business processes
2	Data is a company asset well managed
3	Data Security is maintained and protected so that there are no data usage errors
4	Data availability that can be accessed by the company

4.6 Application Architecture Requirement

Application architecture phase, the indexing of applications that are already running and the applications needed by the organization in managing and processing data that has previously been defined in the data architecture.

Table 3. Application Architecture Requirement

No	Requirement
1	Existing applications are available during business hours
2	Applications can be used to support business processes in the company's staffing
3	Applications can be integrated with other applications

4.7 Technology Architecture Requirement

Technology Architecture Requirements The purpose is to explain the requirements needed to develop technology architecture.

Tabel 4 . Technology Architecture Requiremen

No	Requirement
1	Technology used must be secure to reduce data loss
2	Application of standardization of technology used by companies
3	Existence of technology infrastructure planning in the form of documentation properly so that in the future it will be easy to carry out the development stage
4	Existence of technological changes that can support the company's business processes

4.8 Opportunities and Solution

Opportunities and solutions are the TOGAF ADM phase which explains the evaluation of architectural model designs that were prepared in the previous phases. To be used as a consideration for decision making in the migration planning phase. The resulting artifacts are implementation factor assessment and Education, Consolidate, Gap, solution and Dependencies, project context diagrams and benefit diagrams.

Table 5 . Opportunities and Solution

No	Factor Type	Factor	Description	Deduction
1	Risk	Natural disasters	Natural disasters that may occur resulting in damage to the system that is applied to the company	It takes a backup server application system and data in another location so that data can be maintained if damaged.
		Fire	fires in buildings that might occur for example caused by a short circuit, a short circuit can cause damage to applications or hardware that is on the company.	Develop training for employees if there is a fire in the office or install an alarm in the building if a fire occurs so as to reduce the risk of damage to the application or hardware.
		Hardware Damage	Hardware damage can occur as a result of hardware being hit by an unstable electrical voltage, negligence of routine control.	It takes additional employees in the IT field who are responsible for paying attention to the hardware that is in the company so that the hardware used by the company will be routinely controlled
		Software Malfunction	Software damage can occur due to system errors and individual errors or the system is identified by a virus	It takes a routine controller for the system and special training for employees to avoid system errors implemented by the company
2	Issue	Use of the application	the use of integrated websites with mobile-based applications to support business processes that exist in the company	The need for planning and developing mobile-based application systems to meet company needs and support business activities
		Application based services	Public and employee readiness to use application-based services	existence of socialization for the use of applications or websites to the public and employees

3	Dependencies	Dependency report branch data	Operational activities in the PT Yogya group company depend on reporting documents from each branch such as reports on the results of branching product sales, reports on the number of existing stock, reports on the performance of employees of each branch.	Development of an integrated system so that all data from each branch is easily monitored from each branch head and employee
		Application dependency	Existing activities at PT Yogya group use applications to support the company's operational activities in the event of obstacles in the application or damage to the application	Existence of the application of a data backup system to anticipate if interference occurs in the application.
4	Assumptions	Understanding of the Department of Personnel of PT Yogya group related to personnel application system services	Application services provided for the employment department regarding employee absences, business travel applications, and leave	There is training for the personnel department to use the existing application system
		Customer understanding regarding website services provided by PT Yogya group	Services provided by PT Yogya group are online fashion purchasing services, registration of tenants for food and clothing needs, etc.	existence of an information system that is able to provide information services provided by the company so as to increase sales and make it easier for customers to carry out shopping activities
		Company understanding of the use of the applied system	Staffing application system that was built can be used by the staffing department of PT Yogya group so that it can facilitate the staffing department to monitor the staffing that is at PT Yogya group	Availability of documents and guidance on how to use the existing system in accordance with operational standards.
5	Impact	Implement the e master data system	A comprehensive implementation that will be used to support the Electronic-based staffing department so that it can facilitate	Readiness of the personnel department in using the application so that the system built

			employees in conducting time attendance applications for leave, business trips and in recruiting employees.	will be guaranteed for its continuity
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4.9 Migration Planning

Migration Planning is the TOGAF ADM phase which explains the plan to implement the Enterprise Architecture design for development or development of information technology and information systems.

4.10 Value and Risk Estimation

Table 6. Value and Risk Estimation

Value and Risk Estimation Paramater		
Point	Level	Description
1	Very Low	Able to support supporting business processes with low benefits
2	Low	Able to support supporting business processes with low benefits
3	Medium	Related to the company's operational management system
4	High	Having a high value, supporting the strategic achievement and objectives of some of the company's business functions. If not implement it will have an impact on achieving poor strategic direction
5	Very High	has a very high value, has a close relationship with the achievement of the company's strategic direction. if not implemented it will have an impact on not achieving strategic direction

4.11 Business Value Assesment

Business Value Assessment artifacts that describe business value in a matrix. Business Values artifacts can be used as a reference to prioritize a project

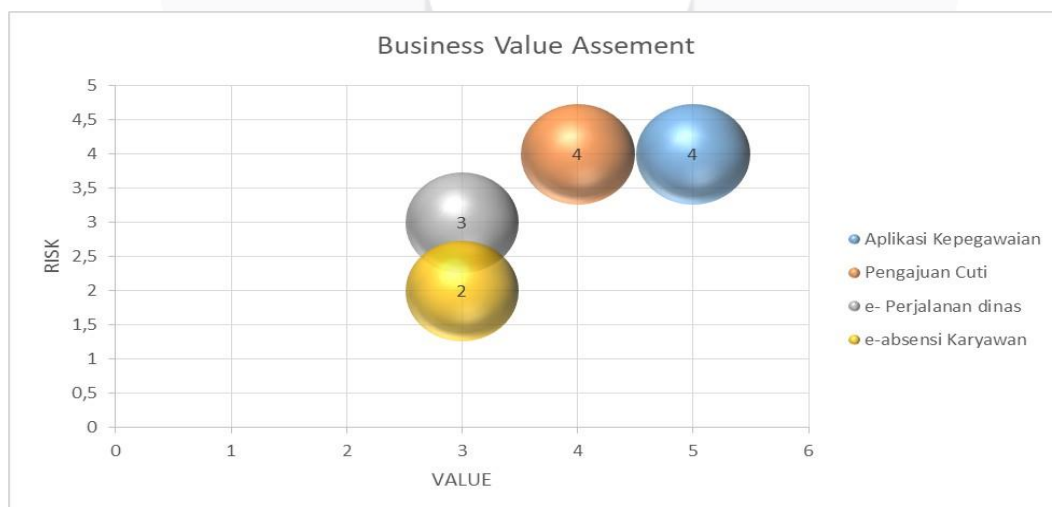


Figure 5. Business Value Assesment

5. Conclusion

Based on the results of Enterprise Architecture Design research in YOGYA GROUP Staffing Functon Togaf ADM:

1. Enterprise Architecture Design in PT Yogya Group's staffing function using TOGAF ADM. Entrprise Architecture design starts from preliminary phase, architecture vision, business architecture, data architecture, application architecture, technology architecture, oppourtunities and solutions, and migration planning
2. The Design Process of Entrprise Architecture produces a target blueprint architecture that is proposed by describing business architecture, information system architecture, and technology architecture. The final draft for implementing the proposed solution to the company is illustrated through the IT Roadmap.
3. The process of designing Enterprise Architecture as a proposed solution in overcoming problems in the staffing function, namely:
 - 1 on the data architecture is performed by a data entity to support the running of the application that is inputting personnel data into the application system
 - 2 on application architecture, application development is carried out so that integration between applications is staffing applications to optimize staffing administration services and simplify the HRD division in the business process of filing employee recruitment leave, employee promotion job rotation, out-of-town service pensions
 - 3 In technology architecture, technology design is in accordance with technology standards by adjusting existing technology in the company

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