

## **Enterprise Architecture Business Model Planning Using EAP Framework (Case Study: PT. Gempita Cahaya Makmur)**

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### **KEYWORDS**

enterprise architecture,  
business architecture,  
EAP, printing

### **ABSTRACT**

The advancement of technology in a company has an impact on improving business quality. From this observation, architectural planning is a part that is used to build alignment between business strategy and information technology. Architecture within the business domain illustrates how a company conducts business activities and functions to achieve the company's goals. Therefore, the company's business model architecture depicts the current state of architecture by identifying business needs and activities. From this study, the business role of PT. GEMPITA CAHAYA MAKMUR, a company engaged in the procurement of goods and services, especially in the field of wholesale office stationery, printing, photocopier sales, and photocopier and laptop rentals, which has customers from medium-sized companies, large companies, both private and government. The use of the Enterprise Architecture Planning or EAP framework focuses on business architecture. The purpose of this research is expected to produce a blueprint proposal that will be beneficial for PT. GEMPITA CAHAYA MAKMUR to plan the business model architecture that will become the foundation for the design phase of application architecture.

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### **Introduction**

Technological developments in companies have an impact on improving business quality. Given this, architectural planning is a part used to align business strategies and information technology, it also applies to businesses such as printing services or office printing equipment procurement services (Fahlevi et al., 2023).

Printing services are currently increasingly needed by the public because they can make it easier to convey information. This makes the printing business very quickly in demand by many people. With the needs of every person, group, business or government that needs a lot of print media, making the printing business reap profits (Roziq et al., 2020).

Printing is a business entity that produces paper raw materials by printing copies of words or images that have been set into printed results that can provide information for

those who receive them. Printing services are currently increasingly needed by the public because the existence of printing services can simplify the process of conveying information (Salamah & Herlawati, 2018).

Enterprise architecture planning is used to create alignment between business and information technology for organizational needs and as a service for business people (Stakeholders) (Sofyana, 2017)

Enterprise architecture is a tool used to establish alignment of business strategy with information technology, which provides a systematic approach to managing system and information assets and directing business strategic needs with planning, and appropriate portfolio management to capture information needs when there are changes in the business environment (Anggrainingsih et al., 2016). Good management of data and information will provide wide access to a globally connected data network. The development and development of this information system must be in line with the direction of the company's strategy (Krisetya, 2014).

Business architecture describes the current state of a company's business architecture, by determining the business model or business activities. This architecture will be the foundation for designing the application architecture phase. The goal to be achieved in this phase is to describe how the company carries out business activities and functions to achieve the company's goals, so that it can be the basis for making an architectural plan by outlining a gap analysis. The business model architecture is carried out by identifying business needs that aim to provide an overview when there are changes in the business environment in accordance with the needs of the Company (Prisyanti et al., 2016)

PT. Gempita Cahaya Makmur was established in 2013 which is located in Tangerang Regency, Banten. Initially, PT. Gempita Cahaya Makmur is engaged in the field of Printing and as a Deler of the ATPM Company (Sole Agent of Brand Holder) Office Equipment such as: Photocopy Machines (Konika Minolta/Develop), Printers (Brother), Large Format Printing Machines (HP), Binding Machines, Cutting Machines, and Paper Shredders, Frames (Uchida), and ATK (Office Stationery).

Currently, PT. Gempita Cahaya Makmur does not yet have an enterprise business model architecture that can be used as a reference in its business activities. Its business activities run in accordance with its main business activities, namely by distributing office equipment, printing machines and other tools to each company that collaborates with PT. Gempita Cahaya Makmur or you can also place orders directly through the WhatsApp application, In the business process still uses recording and distributing manually only through Chat and Phone.

Enterprise Architecture Planning (EAP) is a method developed to build enterprise architecture. EAP is a business and architecture definition that harmonizes the three types of architecture in its development, namely data architecture, application architecture and technology architecture (Spewak & Hill, 1993).

The main problem that occurred in the distribution of goods and tools at PT. Gempita Cahaya Makmur is the absence of accurate recording in order data collection, the absence of a list of companies that become customers and the absence of a company courier who can be a permanent courier in delivering ordered goods and also there are still shortcomings in marketing carried out to increase customers.

The seven blocks make up the stages of the EAP, each of which is built in four stages: getting started, understanding current conditions, defining a vision for the future, and drawing up a plan for the future vision. EAP's focus is on the company's vision and

mission with long-term goals and business functions. Therefore, the Enterprise Architecture Planning methodology will be used when designing the information system architecture of PT. Gempita Cahaya Makmur. This methodology will result in the business model and technology used today. This method helps in the strategic planning of a company's information system by knowing the planning steps.

The study of these problems, the concept to be made is to use a framework or Enterprise Architecture Planning (EAP) Method, this concept is used as a method in planning model architecture that is oriented to business needs consisting of data, application and technology architecture as well as implementation plans from the architecture that has been made to support business activities for the achievement of the organization/company mission (Kurniawan, 2011).

From the background outlined above, the research objective can be identified as creating a business process & technology design in a company using Enterprise Architecture Planning.

The urgency of this research arises from the increasing need for companies to align their business processes with modern technological advancements to remain competitive. PT. Gempita Cahaya Makmur, which operates in the printing and office equipment sector, currently relies on manual processes that are inefficient and outdated. The absence of a structured enterprise architecture has resulted in operational inefficiencies and limited scalability. Therefore, it is crucial to develop a comprehensive enterprise architecture that integrates business strategy and IT systems, allowing the company to streamline its operations and enhance its competitiveness in the market.

The novelty of this research lies in the application of the Enterprise Architecture Planning (EAP) framework to the specific context of the printing and office equipment industry. While the EAP framework has been widely applied in various sectors, its use in this industry, particularly for a company like PT. Gempita Cahaya Makmur, represents a unique contribution. This study combines the EAP framework with the operational requirements of inventory management, sales, marketing, and administrative functions, offering a tailored blueprint that addresses the unique challenges faced by the company.

The primary objective of this research is to design an enterprise business model architecture for PT. Gempita Cahaya Makmur using the EAP framework. This architecture aims to identify and document the company's business processes, technology needs, and operational workflows. Additionally, it seeks to develop a structured blueprint that aligns business strategies with IT systems, enabling improved operational efficiency and scalability. The research will also propose a roadmap for implementing this architecture to support future growth.

The contributions and benefits of this research include providing PT. Gempita Cahaya Makmur with a comprehensive and actionable enterprise architecture blueprint. This blueprint will automate key processes such as inventory management, order tracking, and sales reporting, leading to improved operational efficiency. Furthermore, it will enable the company to scale its operations more effectively, handle increasing customer demands, and ensure that its IT infrastructure is aligned with its long-term business goals. Ultimately, this will give the company a competitive edge in the market by enhancing its ability to respond quickly and efficiently to market changes. Additionally, this research can serve as a case study for other companies in the same industry looking to adopt enterprise architecture planning methodologies.

## Research Methods

There are several frameworks that can be used in the creation of Enterprise Architecture, namely the TOGAF ADM Method, the Zachman Framework and the Enterprise Architecture Planning (EAP) of the three Frameworks, there are several differences in characteristics in each framework.

TOGAF ADM (The Open Group Architecture Framework - Architecture Development Method) is a structured method in designing enterprise architecture, TOGAF ADM has clear steps in designing enterprise architecture for companies or organizations (Pangestu, 2021). TOGAF was chosen because it is a detailed and flexible framework for developing enterprise architectures (Maita & Habibah, 2023). TOGAF also provides a detailed overview of methods for building, managing, and implementing enterprise architectures (Elfariani et al., 2023).

On the other hand, the Zachman Framework offers a different approach. The Zachman Framework focuses on a deep understanding of what, how, where, and why enterprise architecture is built, the Zachman Framework enables a comprehensive understanding of enterprise architecture by considering a variety of different viewpoints (Handoko & Supatmi, 2022).

Meanwhile, the EAP Framework (Enterprise Architecture Planning Framework) is a method that defines architecture to support business and architecture implementation using information (Arya & Fibriani, 2022).

In the context of the difference in work time, TOGAF ADM may take longer because it has structured and detailed steps in designing enterprise architecture (Pangestu, 2021). While the Zachman Framework, with its focus on deep understanding, may require additional time for a comprehensive analysis (Handoko & Supatmi, 2021). The EAP Framework, which focuses on defining the architecture to support the business, may have a shorter turnaround time.

Because the time in making the Enterprise Architecture design and also the data related to this information leads to the Enterprise Architecture Planning (EAP) approach, it was decided to design an Enterprise Architecture that matches the characteristics and existing data, namely using the Enterprise Architecture Planning Framework.

PT. Gempita Cahaya Makmur is a well-known company engaged in the printing sector and as a dealer of the ATPM (Sole Agent of Brand Holder) office equipment company. PT. Gempita Cahaya Makmur was founded by Mr. Agus Heryanto.

PT. Gempita Cahaya Makmur is a business engaged in printing services located at Roxy Square Lt.UG block A5 no.23, West Jakarta which was established in 2013.

Initially, PT. Gempita Cahaya Makmur only accepts at home because it does not have a store. Along with the increasing customer demand in Jakarta, in 2014 a printing shop began to be opened in Roxy Square.

At PT. Gempita Cahaya Makmur printing usually business actors print several products such as flyers, brochures, invitations, agenda books, custom pens, ID cards, envelopes, and promotional media or other printing media. PT. Gempita Cahaya Makmur has several regular customers such as the Ministry of Finance of the Republic of Indonesia (Director of Budget of Central Jakarta), the Ministry of Finance of the Republic of Indonesia (General Finance Training Center, Pancoran Jak-Sel), the Ministry of Finance of the Republic of Indonesia (the Center for Budget & Expenditure Finance Training, gadog Bogor), the Ministry of Finance of the Republic of Indonesia (Balikpapan Financial Training Center), the State Accounting College (STAN Pd. Aren Tang. Cell), EBTKE ESDM (Cikini Central Jakarta), BPSDM Ministry of Law and Human Rights (Cinere

gandul Depok), PT. DATASCRIP (Kemayoran, Central Jakarta), and PT. POS INDONESIA.

## Results and Discussions

### Application Implementation Plan

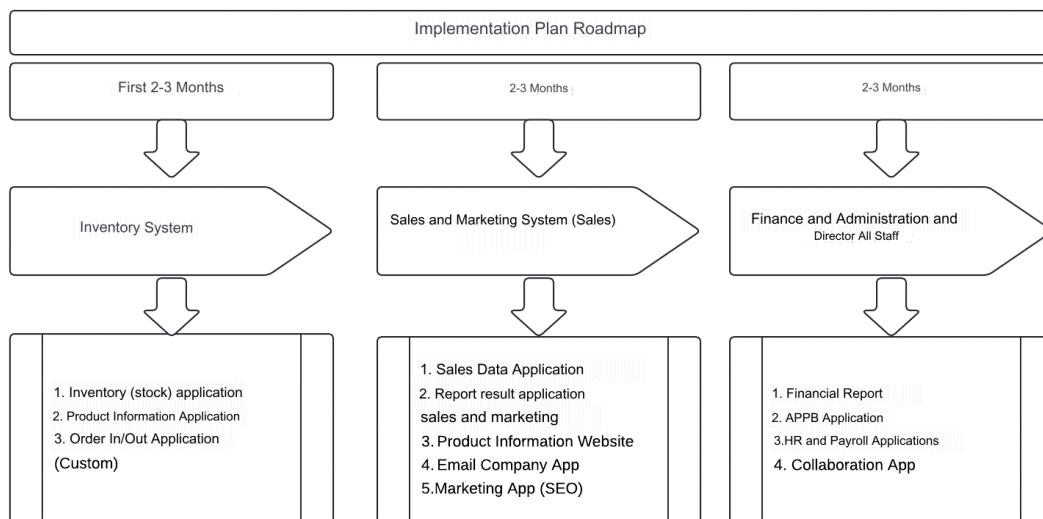
At this stage, the priority of application implementation is determined based on data needs. Applications that generate data must be implemented first before applications that require such data, as can be seen in table 6.

**Table 1 Application Implementation Order**

Business Functions	Application Order Priority	Status
Inventory System	1. Inventory Application (stock) 2. Product Information Application 3. Order In/Out Application (Custom)	Potential to build
Sales and marketing system (Sales)	4. Sales Data Collection Application 5. Application Sales and marketing results report 6. Product Information Website 7. Email Company App 8. Marketing App (SEO)	Potential to build
Finance and Administration	9. Financial Report 10. APPB Application 11. HR and Payroll Applications	Potential to build
Director and All staff	12. Collaboration App	Potential to build

### Roadmap Implementation Plan

The roadmap of the implementation plan for the implementation of this information system will be carried out sequentially as shown in figure 1.



**Figure 1 Implementation Plan Roadmap**

Information:

In figure 1, it can be seen that each Business Function to be implemented has 2-3 months to be implemented, this is raised based on the level of difficulty in creating applications and transferring data. Because the application will be implemented on a small scale and not much, it is proposed that 1 Team with 4 Orng Programmers complete the application in 2-3 months in each stage.

1. Inventory System Function

The implementation of this application will be prioritized because it is the core of all activities and must be completed according to the specified time.

These functions include Applications: Inventory Application (Stock), Product Information Application and Order Receipt and Delivery (custom).

From the application, it can be ensured that the inventory of goods and data about product information can be accessed by all branches.

2. Sales and Marketing System Functions

The implementation of this application is the second in the implementation plan because if the goods are ready, sales and marketing can run smoothly.

This function includes Applications: Sales Data Collection Application, Sales and Marketing Results Report Application, Product Information Website, Email Company App, Marketing App (SEO).

From the application, it can be ensured that Sales or Marketing will run smoothly, and it is also made easier with Marketing App (SEO) in holding advertisements and promotions.

3. Finance and Administration Functions and Director of All Staff

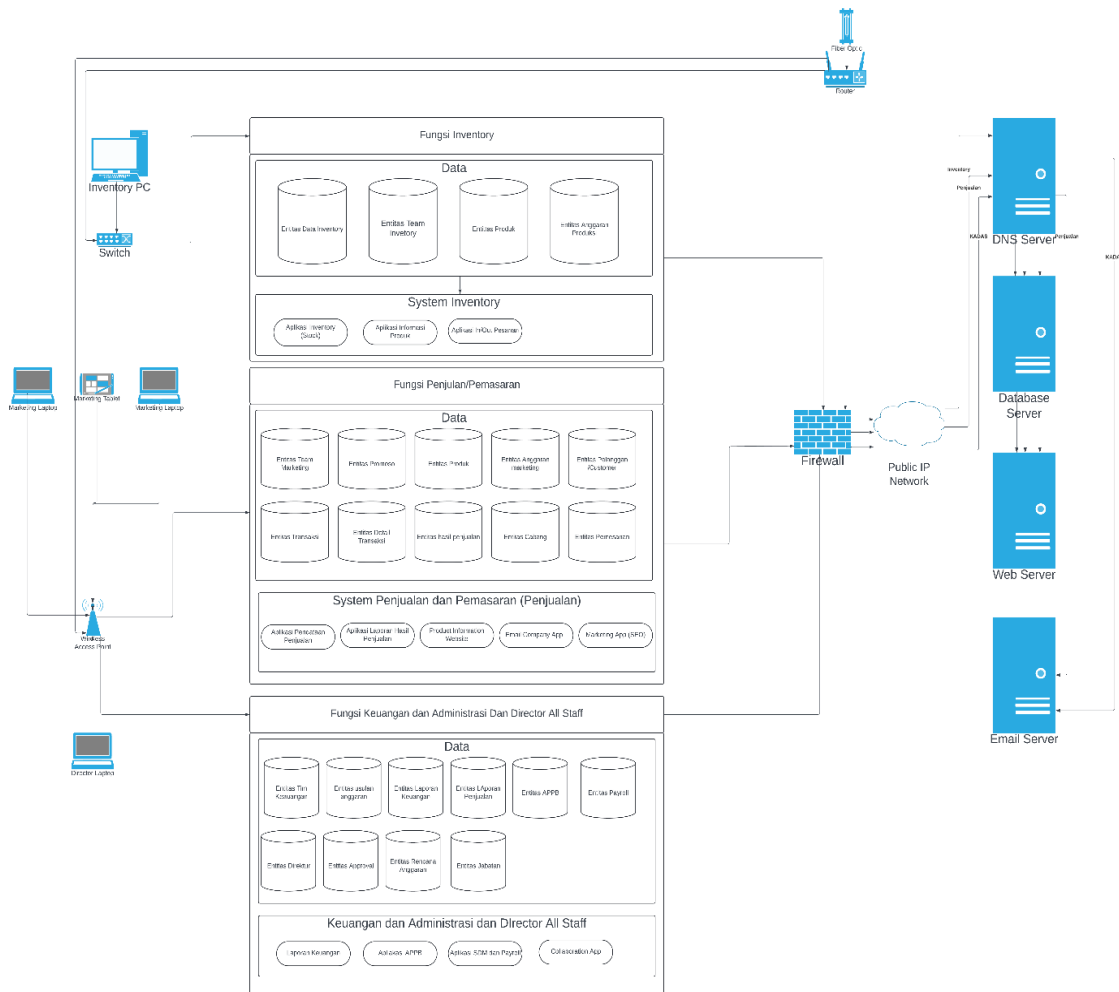
The implementation of this application will be the last stage in the implementation plan, because for the finances and the administrative budget must be kept running, and all approvals and decisions are with the Director.

This function includes Applications: Financial Statements, APPB Applications, HR and Payroll Applications, Collaboration Apps.

From the application, all budgets and finances will be neatly organized along with making it easier for Payroll matters, and also for communicating and discussing with directors and other staff using the collaboration app.

**Enterprise Architecture Planning Output**

From the results presented above, the following is an overview of the output of Enterprise Architecture Planning which can be seen in figure 4-4.



**Figure 2 Enterprise Architecture Planning**

Information:

1. Inventory Function

In this function, there is 1 User with an Inventory PC that is connected to the Switch with inventory applications in the Database Server and Web Server as the interface.

Data entities are stored in the Database Server but need access to the Firewall through the DNS Server will be directed as desired to access the database using Hostname or FQDN (Full Qualified Domain Name)

In this function there are 4 data entities, namely: Inventory Team Entity, Production Team Entity, Product Entity, and Production Budget Entity, from the existing data, there are 3 application candidates that will be built and developed, namely the Inventory Application (Stock), the Product Information Application, and the Order In/Out Application (Custom) which will each be deployed in the Web Server to help the Inventory Team in its operational.

2. Sales/Marketing Function

In this function, there are several Users with Marketing Tablets and 2 Marketing Laptops that are connected via Wireless Access Points with Sales and Marketing applications located in the Database Server and Web Server as the interface and also direct access to the Email server for further promotions.

Data entities are stored in the Database Server but need access to the Firewall through the DNS Server will be directed as desired to access the database using Hostname or FQDN (Full Qualified Domain Name).

In this function there are 10 data entities, namely: Marketing Team Entity, Promotion Entity, Product Entity, Marketing Budget Entity, Customer/Pleanggan Entity, Sales Result Entity, Branch Entity, Order Entity, Transaction Entity and Transaction Detail Entity, from the existing data, there are 5 application candidates that will be built and developed, namely Sales Data Collection Application, Sales and Marketing Results Report Application, Product Information Website Application, Email Company App and Marketing App which will each be deployed in a Web Server to help the Inventory Team in its operations. Especially for Email, it will be installed on the Email Server which will use the Microsoft 365 Business Basic Plan.

3. Finance and Administration Function and Director of All Staff

In this function, there are several users including the Director and all Staff who are with the Director PC and All Staff PC who can connect via Wireless Access Point with financial and administrative applications as well as collaboration applications between directors and staff on the Web Server as the Interface and also collaboration applications using Microsoft 365 on the Mail Server.

In this function, all data entities are connected through the Database server with the Financial Report Application, APPB Application, and Payroll Application on the Web Server while for the Collaboration Application (*Collaboration App*) is on the Email server because it has become a unit using the SaaS Microsoft 365 Business Plan.

## Conclusion

From the results of the analysis and design above, the conclusion of this study is that Enterprise Architecture is very important for companies, especially in companies that have complex branches and business processes.

The result of this research is the design of business architecture using the Enterprise Architecture Plan which can be used as a reference for model architecture planning at PT Gempita Cahaya Makmur to increase sales and the research carried out produces data architecture, applications and technology in the design of the Printing Information System that can help in the efficiency and performance of employees at PT Gempita Cahaya Makmur.



## References

- Anggrainingsih, R., Aziz, A., Salamah, U., & Sihwi, S. W. (2016). Penyusunan Arsitektur Visi dan Arsitektur Bisnis Sebagai Tahapan Perancangan Arsitektur Enterprise Universitas Sebelas Maret (UNS) Dengan Framework TOGAF. *ITSMART: Jurnal Teknologi dan Informasi*, 2(2), 13–20.
- Arya, W., & Fibriani, C. (2022). Perencanaan Strategis Sistem Informasi menggunakan Metode Enterprise Architecture Planning Framework. *Jurnal Locus Penelitian dan Pengabdian*, 1(3), 169–178.
- Elfariani, R., Sudianto, Y., & Kusumawati, A. (2023). Perencanaan Arsitektur Sistem Informasi pada PT. XYZ dengan Menggunakan Pendekatan TOGAF ADM. *Journal of Information System, Graphics, Hospitality and Technology*, 5(2), 76–85.
- Fahlevi, F. Z., Dewi, F., & Praditya, D. (2023). Analisis dan Perancangan Enterprise Architecture Menggunakan TOGAF ADM di Unit Koleksi Penagihan. *KLIK: Kajian Ilmiah Informatika dan Komputer*, 4(1), 583–591.
- Handoko, R. I., & Supatmi, S. (2022). PerancangannEnterprise Architecture Menggunakan ZachmannFramework di Unit LaboratoriumA Fakultas Ilmu Terapan Universitas Telkom. *Jurnal Tata Kelola dan Kerangka Kerja Teknologi Informasi*, 8(2), 49–60.
- Krisetya, N. (2014). *Penerapan Enterprise Architecture Planning (EAP) pada Pembuatan Arsitektur Data, Aplikasi dan Teknologi: studi Kasus PT. Sumber Sehat*. Program Studi Sistem Informasi FTI-UKSW.
- Kurniawan, B. (2011). Enterprise architecture planning sistem informasi pada perguruan tinggi swasta dengan zachman framework. *Majalah Ilmiah UNIKOM*.
- Maita, I., & Habibah, F. (2023). *Perancangan enterprise architecture sistem informasi pelayanan publik di bpn kota pekanbaru*.
- Pangestu, A. A. (2021). Perencanaan Arsitektur Enterprise Menggunakan Togaf Adm Pada Dispora Kota Salatiga. *JATISI (Jurnal Teknik Informatika dan Sistem Informasi)*, 8(2), 826–836.
- Prisyanti, A., Prasetyo, Y. A., & Mulyana, R. (2016). Perancangan Arsitektur Bisnis Dan Arsitektur Data Untuk Layanan Jasa Keuangan Pada Pt. xyz Menggunakan Togaf Adm. *eProceedings of Engineering*, 3(2).
- Roziq, M. F., Murtadho, M. A., & Anugrah, C. S. (2020). Model Sistem Informasi Manajemen Pada Percetakan Online Berbasis Website (Studi Kasus: Biner Jombang). *Jurnal Manajemen Informatika dan Sistem Informasi*, 3(1), 43–50.
- Salamah, U., & Herlawati, H. (2018). Sistem Informasi Penjualan Barang Berbasis Web Pada Percetakan Rahayu Bekasi. *PIKSEL: Penelitian Ilmu Komputer Sistem Embedded and Logic*, 6(1), 61–74.
- Sofyana, L. (2017). Perencanaan Arsitektur Enterprise Dengan Kerangka Kerja TOGAF (The Open Group Architecture Framework). *PROZIMA (Productivity, Optimization and Manufacturing System Engineering)*, 1(2), 64–70.
- Spewak, S. H., & Hill, S. C. (1993). *Enterprise architecture planning: developing a blueprint for data, applications and technology*. QED Information Sciences, Inc.