

Designing an Enterprise Architecture Blueprint for the Cruise Industry Using TOGAF ADM and ArchiMate

William Watasendjaja¹⁾, Glenn Chudra²⁾, Alfa Yohannis³⁾

^{1,2,3)} Pradita University, Indonesia

williamwatasendjaja@gmail.com, glenny.chudra.s2@student.pradita.ac.id, alfa.ryano@pradita.ac.id

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Abstract: Despite its growth and resilience over the last decades, the cruise industry faces significant challenges in its strategic, operational, and technology domains. The unique complexity of the industry requires cruise companies to adopt a structured approach to enterprise transformation. To address this problem, this aims to provide an Enterprise Architecture (EA) blueprint for the cruise industry. Using a case study of a leading cruise line, CruiseX, this study analyzes the operational model of the cruise line and apply two industry-leading standards: The Open Group Architecture Framework (TOGAF) and the ArchiMate modelling language. This study applies the four core phases of TOGAF Architecture Development Method (ADM) from the initial phase of Architecture Vision (Phase A), through the definition of Business Architecture, Information System Architecture, and Technology Architecture (Phase B to D). The ArchiMate language is utilized to visualize the core business processes, information systems, and technology architecture. By using TOGAF ADM as the technical guidelines and ArchiMate as the modeling language, the result of this study is a blueprint of core business processes, application and data that support each business processes, and the underlying technology infrastructure, that provides a structured framework and serves as an actionable tool for implementing enterprise architecture in cruise industry. This research also extends the application of TOGAF and ArchiMate to the under-research cruise industry domain. The study's limitations include the reliance on publicly available data, the limited scope of business processes, and the lacks of practitioner validation, suggesting clear directions for future research.

Keywords: ArchiMate; cruise industry; digital transformation; enterprise architecture; TOGAF-ADM

INTRODUCTION

Based on Cruise Lines International Association (CLIA)'s data, the global cruise industry illustrates an exceptional resilience and growth over the last decades. In 2024, the cruise industry set a new record with 34.6 million passengers globally, this volume was increased by over 9.3% compared to 2023's total passengers. This upward trajectory is also projected to continue. By 2028, the global cruise industry is expected to have a total of 42 million passengers, this volume marks over 21.3% increase over 2024's total passenger volume (Association, 2025).

Despite this impressive growth, the cruise industry only represents 2.7% of the overall international travel and tourism sector. This is due to the unique intersection of multiple business domains, from maritime logistics and onboard hospitality to customer service and regulatory compliance that make the cruise industry one of the most complex industries to operate, especially in strategic, operational, and technological domains. Organizations in the cruise industry need to adopt a structured approach to enterprise transformation to address this issue (Association, 2025) (Peručić & Greblički, 2021) (Risitano, Sorrentino, & Quintano, 2017).

One of the approaches that can be done is by implementing Enterprise Architecture (EA). EA is essential for optimizing enterprise transformation because it offers a strategic framework to apply architectural principles and practices for aligning organization's business, information, process, and technology strategies. Previous studies have shown that EA can enhance the chance of digital transformation success by ensuring operational efficiency,

strategic alignment, and the adoption and integration of new technology (Dumitriu & Popescu, 2020) (Möhring, Keller, Schmidt, Sandkuhl, & Zimmermann, 2023) (Alghamdi, 2024).

In 2023, a Chief Data Officer (CDO) from one of the most well-known cruise companies was interviewed about the company's strategic approach for data management. The main takeaways from the interview are alignment of an efficient data management with the business goals is critical to deliver value, and one of the ways to approach this is by aligning the enterprise architecture framework with the organization's structure (Bureau, n.d.). Other studies also show that a combination of Internet of Things (IoT) and software architecture can help both for passenger comfort and the cruise company's management, especially in operational domains (Barsocchi, Ferro, La Rosa, Mahroo, & Spoladore, 2019); while a flexible and dependable API-led integration on cruise industry can help with the cruise's data exchange problem seamlessly while keeping the security, cost, and performance (IBM, n.d.).

While there is still limited previous research regarding the implementation of EA in the cruise industry, many case studies have shown that digital transformation can help similar industry to optimize their performance. (Klimova, 2022) shows that developing a top-level business process model allows hospitality industry to create an optimal architectural solution, which lead to creation of new opportunities in the era of digitalization. (Lepekhin, Levina, Dubgorn, Weigell, & Kalyazina, 2020) adopt enterprise architecture to create a coherent information technology system that increase seaports operation efficiency. (Kurganov, Dorofeev, & Nastasyak, 2019) uses Zachman enterprise architecture framework to implement transportation management system in transport and logistics companies, which lead to the effective management of the transportation process.

Based on these studies, it's clear that the value of digital transformation is recognizable. But, a structured framework for implementing EA to address the industry's complexities has not been established. In this research, two leading industry standards will be used to fill this gap: The Open Group Architecture Framework (TOGAF) and the ArchiMate modeling language. TOGAF is one of the most well-known and leading architecture frameworks worldwide for developing and managing enterprise architectures. TOGAF's core component, the Architecture Development Method (ADM), provides a step-by-step approach to plan, design, implement, and manage an enterprise architecture to ensure the alignment with the business goals. ArchiMate is a powerful modeling language that can help to describe, analyze, and visualize enterprise architecture across multiple business domains (Group, The TOGAF® Standard, 10th Edition) (Group, ArchiMate Modelling Tool User Guide, version 5.6.0).

This study is expected to provide a practical contribution for cruise line's management in adopting digital transformation in aligning their business, information, and technology to optimize their operational performance; while also provide an academic contribution of EA implementation in a new domain such as cruise industry.

The main objective of this study is to design an enterprise architecture blueprint for the cruise industry using TOGAF ADM and ArchiMate. To achieve this objective, several key research as posed: How an enterprise architecture is developed in cruise line industry? (RQ1). How TOGAF ADM and ArchiMate is used to implement enterprise architecture in cruise line industry? (RQ2). How can enterprise architecture help the cruise industry operation? (RQ3).

LITERATURE REVIEW

A literature review was conducted for this study to find the foundation of the study and to ensure that the study has a clear and structured methodology. The literature review in this study focuses on Enterprise Architecture (EA), The Open Group Architecture Framework (TOGAF), and ArchiMate.

Enterprise Architecture (EA)

Enterprise Architecture (EA) is a crucial part in a successful digital transformation project. It helps organizations to understand their architectural structure by providing a practical guideline for analyzing and understanding the technical descriptions of an architecture in a certain business area. It also can be used for designing, managing, and developing the overall architecture and aligning the organization's business process, application, data, and technology with their objectives to ensure that each component functions effectively to support the organization's operation (Dumitriu & Popescu, 2020) (Möhring, Keller, Schmidt, Sandkuhl, & Zimmermann, 2023) (Alghamdi, 2024).

The Open Group Architecture Framework (TOGAF)

The Open Group Architecture Framework (TOGAF) is one of the most used enterprise architecture frameworks that provide a structured and comprehensive approach to plan, develop, implement, and manage an organization's enterprise architecture. Its core components, the Architecture Development Method (ADM) is an iterative and cyclical process guideline through various phases of architecture development. The ADM starts with preliminary planning and establishes an Architecture Vision (Phase A), then continues with defining the current and target architecture across multiple domains: Business Architecture (Phase B), Information Systems Architecture (Phase

*Citra Dewi Megawati



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C), and Technology Architecture (Phase D). Then it continues by addressing Opportunities and Solutions (Phase E), Migration Planning (Phase F), Implementation Governance (Phase G), and Architecture Change Management (Phase H) (Group, The TOGAF® Standard, 10th Edition) (Hengky, Dazki, & Indrajit, 2024) (Sentosa, Indrajit, & Dazki, 2024). The complete TOGAF ADM cycle shown in Fig. 1.

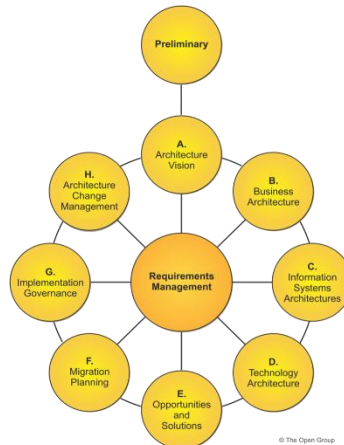


Fig. 1 TOGAF Architecture Development Method (Group, The TOGAF® Standard, 10th Edition)

The TOGAF ADM is chosen in this study because the step-by-step approach make it easier to implement enterprise architecture in a complex industry such as the cruise industry. The iterative and phased process also helps the organizations to learn, adapt, and test changes in manageable cycles, while reducing the risk of misimplementation.

ArchiMate

ArchiMate is an open-source enterprise architecture modeling language that is fully aligned with TOGAF. It is specifically designed to describe, analyze, and visualize an organization’s architecture across multiple business domains. ArchiMate uses a layered and service-oriented perspective on architectural models, where higher layers utilize services provided by lower layers. Its main layers including Strategy Layer, Business Layer, Application Layer, and Technology Layer are aligned with TOGAF ADM’s phase A to D (Group, ArchiMate Modelling Tool User Guide, version 5.6.0).

The ArchiMate modelling language is chosen in this study because it is fully aligned with TOGAF ADM phase, especially Phase A (architecture vision) to Phase D (technology architecture) and ArchiMate modeling language provides the clear visual for describing and communicating the technical guidelines that are defined using TOGAF ADM.

METHOD

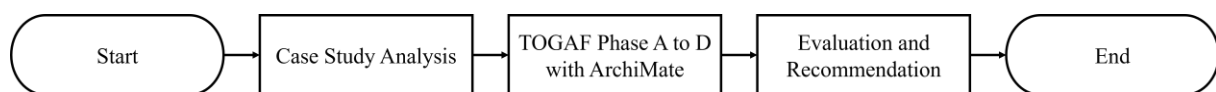


Fig. 2 Research methodology

The research methodology used in this study was shown in Fig. 2 and described below:

Case Study Analysis

A case study analysis process is performed to analyze the current situation within the cruise industry. The case study will be conducted at CruiseX, one of the world’s leading cruise lines. Key necessary data including CruiseX’s goals, missions, and values; core business processes, stakeholders, and resources; operational processes and challenges; and technologies used are obtained using publicly available information on CruiseX, such as: CruiseX’s internal reports and documentations, Cruise Lines International Association (CLIA)’s reports, and other interviews and documentations about CruiseX.

TOGAF Phase A to D with ArchiMate

The TOGAF phase A (architecture vision) to D (technology architecture) process is performed by using ArchiMate to visualize the abstract concept that is defined by TOGAF ADM into simple and understandable

*Citra Dewi Megawati



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visuals for various stakeholders using the data obtained from the case study analysis phase. The version that will be used is Archi 5.3.0 with the ArchiMate 3.2 specification.

The architecture vision phase (Phase A) will be visualized using ArchiMate’s strategy layer based on CruiseX’s goals, missions, values, stakeholders, core business processes, and resources; while the operational processes and technologies will be used to visualized each CruiseX’s core business processes for the business architecture (Phase B); information system architecture (Phase C), which include data architecture and application architecture; and technology architecture (Phase D).

The business architecture will be visualized using ArchiMate’s business layer (yellow color scheme), the information system architecture will be visualized using ArchiMate’s application layer (blue color scheme), and the technology architecture will be visualized using ArchiMate’s technology layer (green color scheme).

Evaluation and Recommendation

The results from previous step are used to evaluate the core process coverage, correlation between each layer, also the advantages and limitations of the enterprise architecture designed. That evaluation is then used to find the existing gap and give recommendations for further research.

RESULT

Architecture Vision

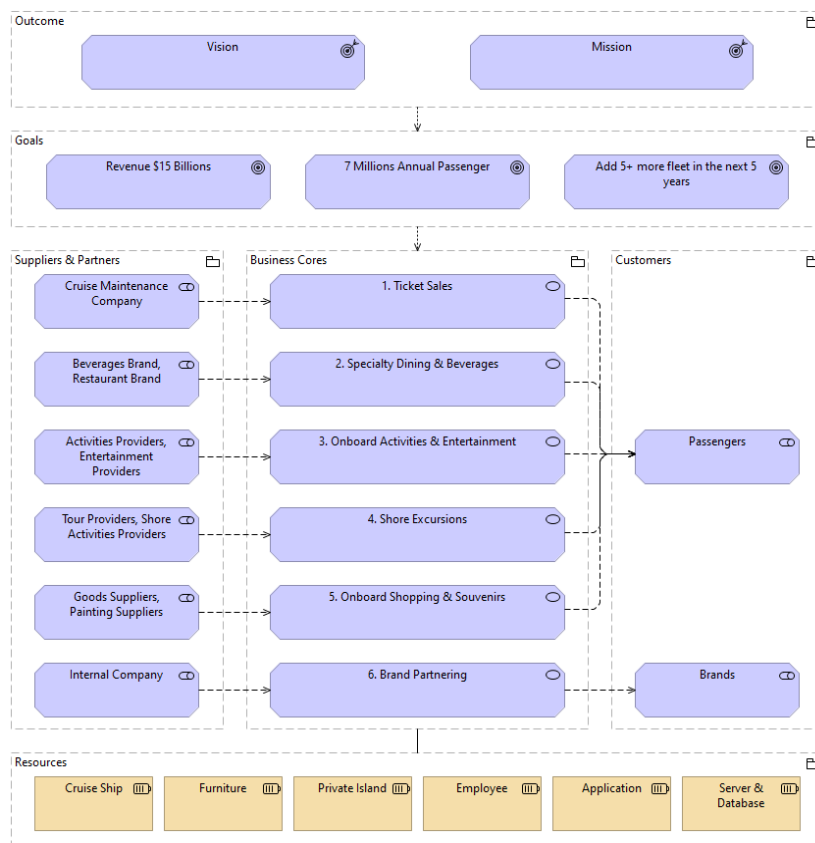


Fig. 3 CruiseX Architecture Vision

The architecture vision in TOGAF ADM focuses on establishing the overview of the organization’s architecture by defining the business objectives, stakeholders (suppliers and customers), business core processes, and the resources that support the business function. The CruiseX architecture vision can be seen in Fig. 3. Based on the data obtained, the CruiseX have three main goals: generating revenue of 15 billion USD, 7 million annual passengers, and adding more than 5 new fleet in the next 5 years. The main business core includes: ticket sales, specialty dining and beverages, onboard activities and entertainment, shore excursions, onboard shopping and souvenirs, and brand partnering. Cruise management company; beverage and restaurant brands; activities, entertainment, and tour providers; goods and painting suppliers are key suppliers and partners to support delivering the business core for the customers. Several main resources including cruise ships, furniture, private island, employees, applications, server, and databases are also important to keep the business running.

*Citra Dewi Megawati



Business Architecture

The business architecture domain in TOGAF ADM focuses on what the organization does and how it functions by defining the organization’s business strategies, core processes, and objectives. The business architecture in CruiseX includes: ticket sales, specialty dining and beverages, onboard activities and entertainment, shore excursions, onboard shopping and souvenirs, and brand partnering.

The ticket sales business process illustrates the ticket booking starts when prospective passengers access the cruise booking website. On the booking website, they need to filter the destination, departure port, and boarding date that they desired. Then, they need to select a specific cruise route and boarding date. Next, they need to choose their cabin class, room type, and room location. The prospective passengers then need to input their personal information and also choose an additional option or cruise package if needed. After completing all the information that is needed, they can continue with the payment process. After the payment process is done, they will receive a receipt of the ticket booking confirmation. The ticket sales business architecture can be seen in Fig. 4.

The specialty dining and beverages business process starts when passengers visit a restaurant, cafe, or bar on the cruise. Then, they can order the food or drink from the menu. After that, they can continue with the payment process. After the payment process is done, they will receive a receipt of the specialty dining or beverages order confirmation. The specialty dining and beverages business architecture can be seen in Fig. 5.

The onboard activities and entertainment business process starts when passengers open the cruise application. In the application, they need to filter the date and choose the onboard activities or entertainment that they prefer. Then, they can continue with the payment process. After the payment process is done, they will receive a receipt of the onboard activities or entertainment booking confirmation. The onboard activities and entertainment business architecture can be seen in Fig. 6.

The shore excursions business process starts when passengers open the cruise application. In the application, they need to filter the date and location of the shore excursions. Then, they need to choose the shore excursions that they prefer. After that, they can continue with the payment process. After the payment process is done, they will receive a receipt of the shore excursions booking confirmation. The shore excursions business architecture can be seen in Fig. 7.

The onboard shopping and souvenirs business process starts when passengers visit a shop or souvenirs merchant on the cruise. Then, they can choose the product that they desire. After that, they can continue with the payment process. After the payment process is done, they will receive a receipt of the onboard shopping or souvenirs payment confirmation. The onboard shopping and souvenirs business architecture can be seen in Fig. 8.

The brand partnering business process starts when a brand accesses the cruise partnering website. On the website, they need to choose the specific cruise ship and location within the cruise ship that they desire. Then, there will be a cruise representative that will set a meeting for a contract and price negotiation. If they agree with the price, they can continue with the payment process. After the payment process is done, they will receive a receipt of the brand partnering payment confirmation. The brand partnering business architecture can be seen in Fig. 9.

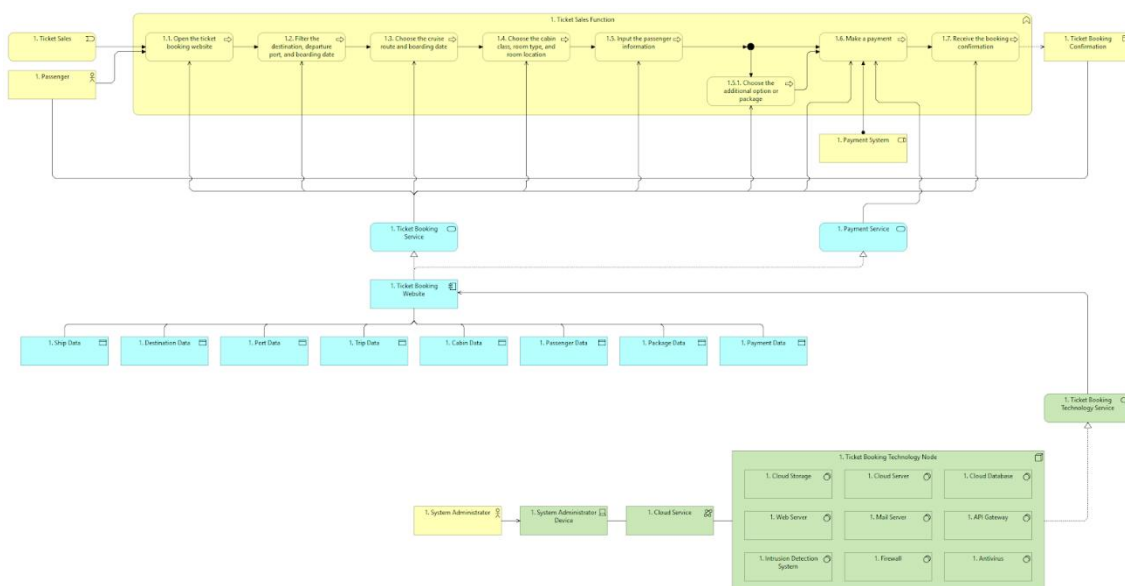


Fig. 4 Ticket Sales ArchiMate Model

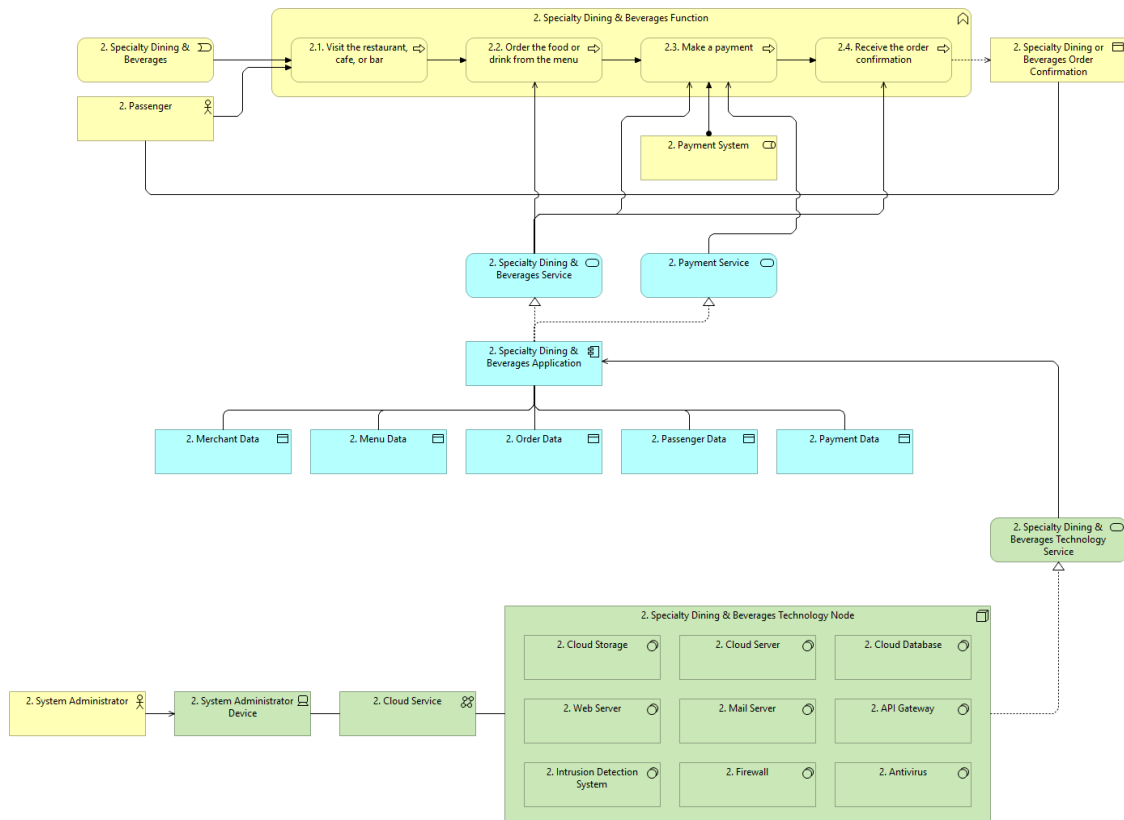


Fig. 5 Specialty Dining and Beverages ArchiMate Model

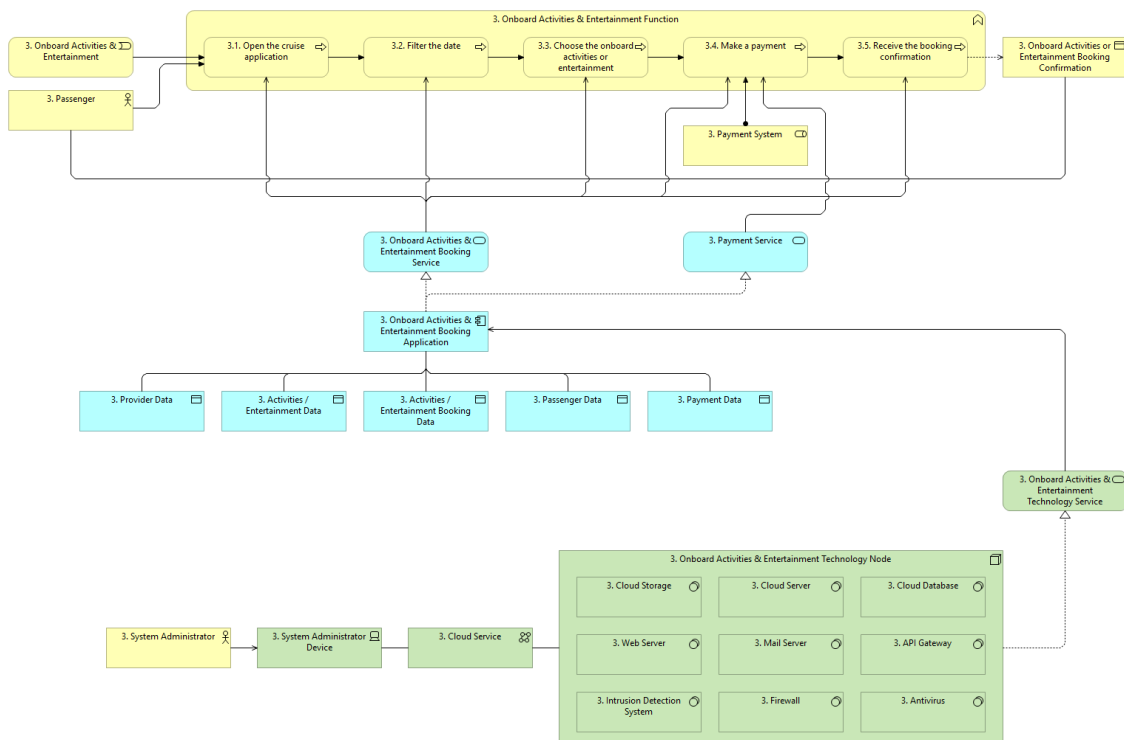


Fig. 6 Onboard Activities and Entertainment ArchiMate Model

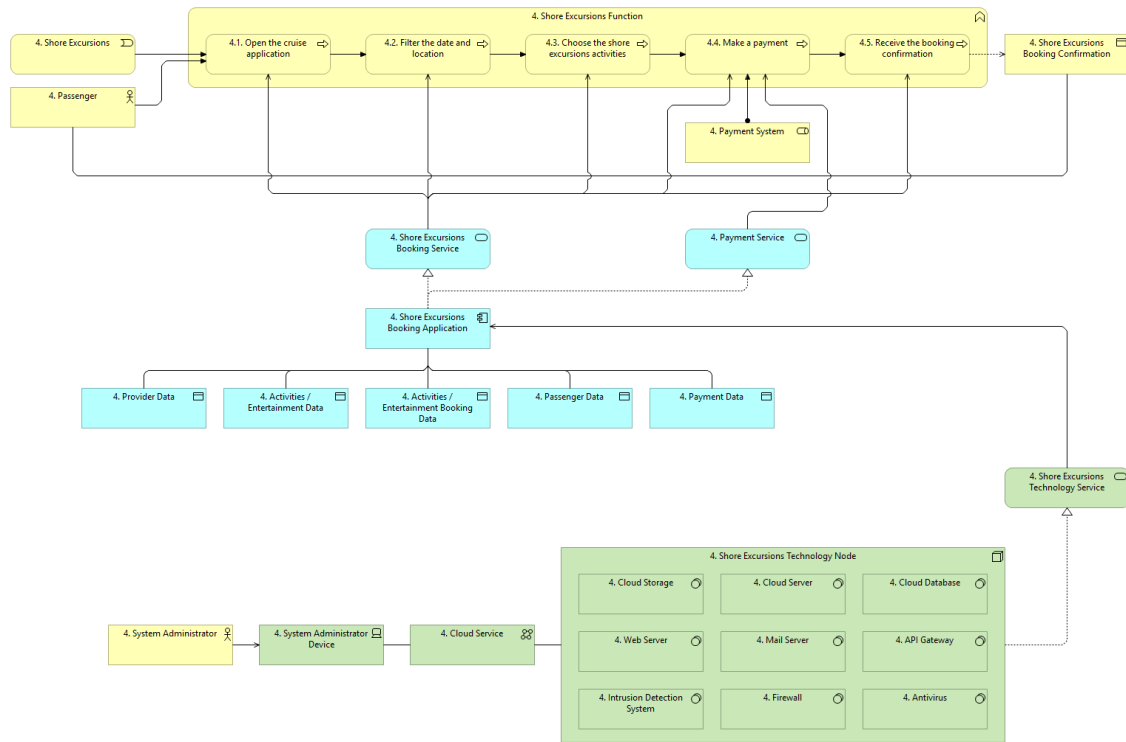


Fig. 7 Shore Excursions ArchiMate Model

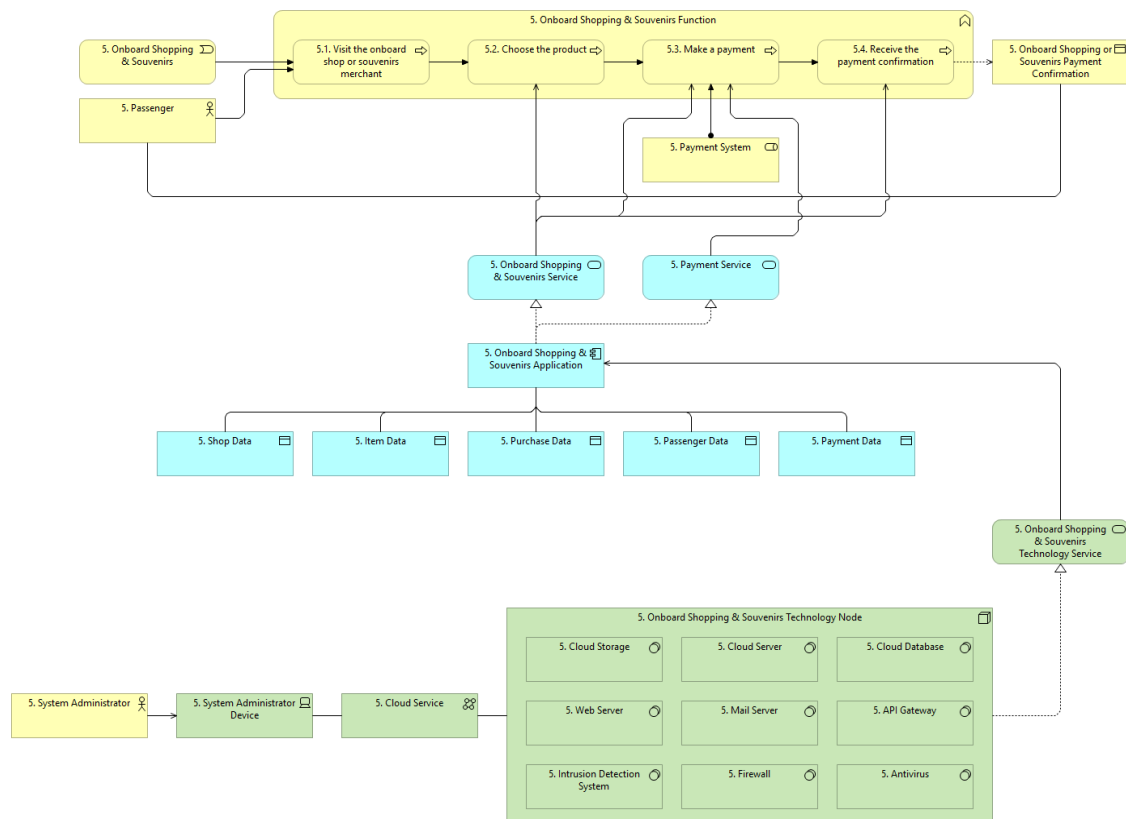


Fig. 8 Onboard Shopping and Souvenirs ArchiMate Model

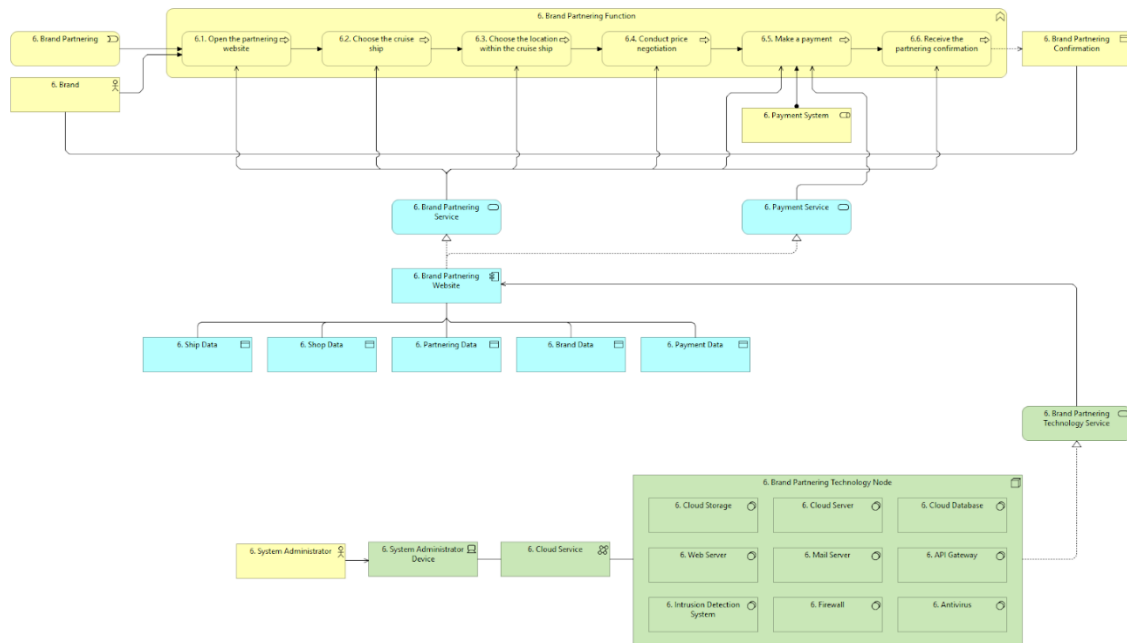


Fig. 9 Brand Partnering ArchiMate Model

Information System Architecture

The information system architecture domain in TOGAF ADM focuses on defining the information systems that support the organization’s business processes. This phase consists of Data Architecture and Application Architecture.

The **data architecture** domain in TOGAF ADM focuses on how all data is structured, managed, and used through the business processes to ensure data integrity, accessibility, and consistency. The data architecture in CruiseX enterprise architecture include: activities and entertainment booking data, activities and entertainment data, brand data, cabin data, destination data, item data, menu data, merchant data, order data, package data, partnering data, passenger data, payment data, port data, provider data, purchase data, ship data, shop data, and trip data. The list of data architecture notation was shown in Table 1.

Table 1 Data Architecture notation

Notation	Documentation
Activities / Entertainment Booking Data	The activities or entertainment booking data describes data related to bookings for CruiseX activities or shows. It consists of booking id, activity id, trip id, passenger id, cabin id, booking date, number of guests, currency code, price, payment id, and booking status.
Activities / Entertainment Data	The activities or entertainment data describes data related to activities or shows on CruiseX. It consists of activity id, activity name, provider id, activity type, activity location, activity scheduled, duration, minimum age, max capacity, currency code, price, and activity status.
Brand Data	The brand data describes data related to lists of brands partnered with CruiseX. It consists of brand id, brand name, brand type, contact person, contact email, and contact phone number.
Cabin Data	The cabin data describes data related to cabins available on each CruiseX ship. It consists of cabin id, ship id, cabin number, cabin class, room type, deck number, cabin size, max occupancy, and cabin status.
Destination Data	The destination data describes data related to destinations visited by CruiseX ship. It consists of destination id, destination name, city, country, region, continent, timezone, currency used, official language, and visa requirement.

Item Data	The item data describes data related to lists of purchasable products at each store on CruiseX ship. It consists of item id, item name, item type, shop id, currency code, and unit price.
Menu Data	The menu data describes data related to food and drink sold at each restaurant, cafe, or bar on CruiseX ship. It consists of menu id, menu name, merchant id, menu type, effective date, end date, currency code, and menu price.
Merchant Data	The merchant data describes data related to restaurant, cafe, or bar on CruiseX ship. It consists of merchant id, merchant name, ship id, merchant type, merchant location, contact person, contact email, and contact phone number.
Order Data	The order data describes data related to orders of food and drink at each restaurant, cafe, or bar on CruiseX ship. It consists of order id, ship id, trip id, passenger id, merchant id, menu id, order datetime, currency code, order total price, payment id, and order status.
Package Data	The package data describes data related to additional packages or options offered on CruiseX ships. It consists of package id, package name, package type, currency code, and package price.
Partnering Data	The partnering data describes data related to lists of partnership with CruiseX. It consists of partnering id, brand id, contract type, contract duration, contract start date, contract end date, currency code, contract value, ship id, shop id, payment id, and partnering status.
Passenger Data	The passenger data describes data related to CruiseX passenger information. It consists of passenger id, first name, last name, date of birth, gender, nationality, passport number, email address, phone number, address, city, state province, country, and postal code.
Payment Data	The payment data describes data related to payment transactions during CruiseX voyage. It consists of payment id, booking id, order id, payment date, currency code, payment amount, payment method, and payment status.
Port Data	The port data describes data related to ports visited by CruiseX ships. It consists of port id, port name, destination id, port code, latitude, longitude, max ship length, max ship width, and number of ship berths.
Provider Data	The provider data describes data related to activity, show, or tour provider available when CruiseX ship is docked. It consists of provider id, provider name, destination id, port id, provider type, contact person, contact email, and contact phone number.
Purchase Data	The purchase data describes data related to product purchases at each merchant on CruiseX ship. It consists of purchase id, shop id, item id, passenger id, purchase date, currency code, quantity, total price, payment id, and purchase status.
Ship Data	The ship data describes data related to cruise ships operated by CruiseX. It consists of ship id, ship name, ship class, ship-built year, ship length, ship width, ship weight, ship max speed, ship passenger capacity, ship crew capacity, number of decks, number of cabins, and ship status.
Shop Data	The shop data describes data related to shops at each CruiseX ship. It consists of shop id, shop name, ship id, shop type, location on ship, and operating hours.
Trip Data	The trip data describes data related to each CruiseX voyage. It consists of trip id, ship id, trip name, trip type, trip route, departure date, return date, trip duration, embarkation port id, disembarkation port id, number of passengers onboard, number

	of crews onboard, number of available cabins, number of booked cabins, and trip status.
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The **application architecture** domain in TOGAF ADM focuses on how each software system interacts and integrates with each other within the enterprise architecture. The application architecture in CruiseX enterprise architecture include: brand partnering website, onboard activities and entertainment booking application, onboard shopping and souvenirs application, shore excursions booking application, specialty dining and beverages application, and ticket booking website. The list of application architecture notation was shown in Table 2.

Table 2 Application Architecture notation

Notation	Documentation
Brand Partnering Website	The brand partnering website is a website that can be used by brand representatives to conduct a partnership with CruiseX.
Onboard Activities & Entertainment Booking Application	The onboard activities and entertainment booking application is an application within the CruiseX application where passengers can book activities or entertainment on the cruise ship.
Onboard Shopping & Souvenirs Application	The onboard shopping and souvenirs application is an application within the CruiseX application where passengers can view the product list of a shop or merchant on the cruise ship.
Shore Excursions Booking Application	The shore excursions booking application is an application within the CruiseX application where passengers can book activities or tour when the ship is docked in a tourism place.
Specialty Dining & Beverages Application	The specialty dining and beverages application is an application within the CruiseX application where passengers can view the menu of a restaurant, cafe, or bar on the cruise ship.
Ticket Booking Website	The ticket booking website is a website that can be used by prospective passengers to book their tickets on CruiseX.

Technology Architecture

The technology architecture domain in TOGAF ADM focuses on the hardware, software, and network infrastructure needed to support the organization’s IT capabilities. The technology architecture in CruiseX enterprise architecture include: antivirus, API gateway, cloud database, cloud server, cloud storage, firewall, Intrusion Detection System (IDS), mail server, and web server. The list of technology architecture notation was shown in Table 3.

Table 3 Technology Architecture notation

Notation	Documentation
Antivirus	Antivirus is one of the key components of network security as it actively scans files, applications, and systems to protect them from malicious programs and suspicious behaviour. Its main function includes providing real time protection by detecting and identifying various malwares, then quarantining or removing these malwares from the systems (Jovanović, Cvjetkovic, & Cvjetković, 2024). In CruiseX, antivirus software is used as an additional layer of protection to ensure CruiseX data integrity and security from security threats.
API Gateway	API gateway is a single-entry point for all requests received from client applications then processing the requests as needed to the backend services. It also can help to enhance performance and resource management capabilities by minimizing the overheads through centralizing the routing, load balancing, and security coordination

	(Kadiyala & Taqa, 2024). In CruiseX, API gateway is used to manage service requests both from internal applications and external partners to the backend application services within CruiseX application ecosystems.
Cloud Database	Cloud database is a database that is hosted and managed on a cloud platform, enabling organizations to have scalable, flexible, and cost-effective database management solutions. By using a cloud database, organizations can access their data from anywhere with an internet connection. It is also often more secure than on-premise databases and has built-in disaster recovery features, which allows organizations to focus on their business (Karunamurthy, Yuvaraj, Shahithya, & Thenmozhi, 2023). In CruiseX, cloud databases are used to store and manage structured data from CruiseX’s applications.
Cloud Server	A cloud server is a physical or virtual infrastructure that is hosted and delivered over the internet by a cloud service provider. It can perform the same functions as a traditional server, such as delivering applications, processing power, and providing data storage (Yuniarto, 2023). In CruiseX, cloud servers are used to host all of CruiseX’s applications, services, and databases.
Cloud Storage	Cloud storage is a data repository service that can be accessed over the internet, which enables organizations to store and retrieve data from anywhere in the world. Cloud storage provides a secure, durable, and cost-effective way to store data in large volumes and ensure it’s accessible whenever needed (Pawar, Naik, Choudhari, Tonge, & Adhav, 2022). In CruiseX, cloud storage is used to store data that cannot be stored in the cloud database, such as passenger document upload, multimedia files, logs, and backups.
Firewall	Firewall is a network security system that actively monitors, filters, and controls incoming and outgoing traffic based on predefined security rules. Its main function includes blocking unauthorized data, access, or traffic from untrusted networks while also enforcing access control policies from trusted networks (Roopesh, 2024). In CruiseX, a firewall is used to monitor and control network traffic within CruiseX’s network infrastructures.
Intrusion Detection System	Intrusion detection system is a network security system that continuously analyzes network traffic to look for patterns that could indicate suspicious activities then alerts the network security personnel, allowing them to investigate and respond before further damage can be done (Roopesh, 2024). In CruiseX, an intrusion detection system is used to monitor and detect suspicious activities that might bypass the firewall within CruiseX’s network infrastructures.
Mail Server	Mail server is a system program that handles email delivery, routing, and reception over the internet (Ramadhani, Miko, Diningsih, & Habib). In CruiseX, mail server is used to handle email communications within CruiseX’s applications, such as booking and order confirmations.
Web Server	Web server is a server software that mainly uses Hypertext Transfer Protocol (HTTP) to store, process, and deliver content that was requested by users over World Wide Web (WWW) (Ramadhani, Miko, Diningsih, & Habib). In CruiseX, web servers are used to handle contents for all user-facing interfaces within CruiseX’s applications.

DISCUSSIONS

The enterprise architecture blueprint developed in this study provides a foundation to approach digital transformation in the cruise industry. This study addresses the gap in existing literature that focused on the application of a specific technology without a structured framework for the cruise industry. The application of TOGAF-ADM four core phase (A-D) and ArchiMate used in a case study based on the operational and strategic model of CruiseX offers a broader perspective that integrates various business processes and domains.

The visualizations created using ArchiMate serve as a diagnostic and planning tool to map the business architecture to their corresponding application and technology layers, highlighting the connections between the enterprise's architecture. The **architecture vision** (Phase A) in Fig. 3 visualizes CruiseX's strategic goals, core business processes, stakeholders, and resources. This architecture vision is essential in designing the enterprise architecture because it ensures that all architectural designed in the next phase are aligned with the business main objectives. The **business architecture** (Phase B) in Fig. 4-9 visualizes the flow of how each core business process operates in CruiseX. By mapping out the detailed process, it provides a foundation for identifying inefficiencies, redundancies, and opportunities for improvement for each core business process. The **information system architecture** (Phase C) visualized the connection of each business processes with the application and data that support them. The data architecture (Table 1) and the application architecture (Table 2) shows that the information system architecture is a critical part in the operation of a cruise industry. The **technology architecture** (Phase D) as defined in Table 3 shows technologies required to support the information system architecture.

In response to the research questions: for RQ1, the enterprise architecture in cruise line industry is developed using a structured, iterative, and phased approach based on the TOGAF ADM. This approach is a top-down methodology starting from a clear business vision, then break down the enterprise into business, data, application, and technology architecture while using a standardized modeling language like ArchiMate to describe the relationship between each architecture/layer. For RQ2, the TOGAF ADM and ArchiMate work together, the TOGAF ADM define what to do by providing the step-by-step process for planning and designing the enterprise architecture, while ArchiMate provides the visualization to communicate the architectural components and their connections. For RQ3, the enterprise architecture will help the cruise industry by providing a clear and holistic view of the organization. It will also help to align their architecture with the business goals, streamline and optimize the core processes operation, and ensure that the integrated technology can enhance passengers experience, improve operational efficiency, and support future growth and innovation.

CONCLUSION

Despite its impressive growth and resilience, the cruise industry is a complex ecosystem that lacks a structured framework for enterprise transformation. Through a case study at CruiseX, this research applied TOGAF Architecture Development Method (ADM) from phase A to phase D, then visualizing it with ArchiMate to provide a foundation for implementing Enterprise Architecture (EA) in the cruise industry. The result is a blueprint for the cruise industry, starting from the strategic vision to the business, information system, and technology architecture. This blueprint serves as an actionable tool for organizations in the cruise industry. By mapping the connection between business objectives, operational processes, applications, and technologies, cruise line management can identify any ineffectiveness, redundancies, and improvement opportunities, therefore making a better decision for their operational. This research also extends the application of TOGAF and ArchiMate to an under-research domain such as cruise industry. Despite these findings, this research has several limitations, such as: the data used in this research was based on publicly available information, which may not fully capture the complete details of the cruise line's operations; the core business process is limited and not fully cover the scope of a cruise line's operations; the proposed blueprint has not been validated by practitioners or stakeholders within the cruise line; and this research only covers phases A to D of the TOGAF ADM. Therefore, future research could explore the implementation of EA in a specific cruise line to validate the foundation in this research, then continue to implement the next phases of the TOGAF ADM (phase E to phase H) to address specific challenges in that cruise line.

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*Citra Dewi Megawati



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