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TOGAF-Based Business Architecture Design for FinLy in Innovation and Monetization of AI-Based Digital Financial Services

Markus Adrian Karjadi *
Information and Technology, Pradita University, Tangerang, Indonesia
markus.adrian@student.pradita.ac.id
**Corresponding author*

Richardus Eko Indrajit
Information and Technology, Pradita University, Tangerang, Indonesia
eko.indrajit@gmail.com

Erick Dazki
Information and Technology, Pradita University, Tangerang, Indonesia
erick.dazki@pradita.ac.id

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***Abstract*—**This study aims to design a business architecture for FinLy, a digital startup focused on the development and monetization of AI-based financial products. The approach follows the TOGAF Architecture Development Method (ADM), with particular emphasis on the Architecture Vision, Business Architecture, and Opportunities & Solutions phases. Employing a Design Science Research methodology, the architectural models are constructed using ArchiMate, Business Model Canvas, and Business Capability Mapping. Findings demonstrate that FinLy's business architecture effectively maps four core capability domains to ten revenue streams that align with its digital monetization strategy. Evaluation results indicate that the architecture is modular, adaptive, and strategically aligned. The novelty of this research lies in the end-to-end integration of the TOGAF framework, generative AI technologies, and digital monetization mechanisms within the context of financial product design. As such, FinLy serves as a reference model for financial startups seeking to establish a capability-based enterprise architecture supported by cloud-native tools like Figma, Google Cloud Platform, and Oracle Database. This work contributes to the advancement of business architecture frameworks that are both technically efficient and capable of delivering personalized, adaptive, and commercially sustainable services in the digital era.

Keywords — AI Product Design, Business Architecture, Capability Mapping, Monetization Strategy, TOGAF ADM

I. INTRODUCTION

In the increasingly competitive digital economy age of today, companies in the financial sector are required to provide adaptive, innovative, high-value products and services. The acceleration of digital progress has driven the need to use intelligent technology such as artificial intelligence (AI) to optimize operational efficiency, accelerate product innovation, and offer a more personalized user experience (Bhattacharjee & Rroy, 2024; Mohsen et al., 2025; Omokhoa et al., 2024).In that regard, the main challenge here is not just on the tech side, but even based on how organizations can build a business architecture platform that can absorb change on a sustainable scale, while supporting multiple and different monetization methods.

Enterprise Architecture (EA) is a relevant systemic approach in addressing such challenges, mainly through the framework of TOGAF (The Open Group Architecture Framework) offering a comprehensive methodological approach and phases (Alghamdi, 2024; Sari et al., 2025; Wedha et al., 2023)TOGAF guides organizations to coordinate business and technology strategies in a structured manner by using the Architecture Development Method (ADM) cycle. With capability-based strategy, value streams, and formal modeling such as ArchiMate, TOGAF provides a foundation for developing architectures that are responsive to the strategic and operational needs of the firm. In finance, the merge is more and more crucial because of the degree of regulation, product complexity, and need for innovation speed.

This research focuses on designing a business architecture for FinLy, a fictional digital entity constructed as a case study to explore the application of TOGAF in supporting AI-based financial product innovation. FinLy is presented to simulate the real challenges faced by startup companies in the digital financial sector, especially in developing a sustainable digital revenue strategy supported by a modular and scalable architectural structure. By using a capability-based planning approach, value stream mapping, and visual modeling through ArchiMate, this research aims to produce an architectural model that is not only technically effective but also strategically aligned with modern business needs.

II. LITERATURE REVIEW

FinLy's development as a start-up that prioritizes AI-based financial product design innovation requires a deep understanding of the integration between Artificial Intelligence (AI), Enterprise Architecture (EA), and the TOGAF framework. Recent studies in the past four years have strengthened the scientific foundation for FinLy's business strategy.

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A. The Role of AI in Financial Services and Regulation

Wu(2024) identifies the revolutionary transformation brought about by artificial intelligence (AI) in the financial sector through deep learning, synthetic data, and data-driven personalization. Utilization of these technologies is facilitating more flexible services, accurate risk assessment, and can improve efficiency in anomaly detection. Aside from this, Wu also places more focus on sound and open regulation of AI, especially with regards to highly regulated financial markets. Frameworks such as AI TRiSM (AI Trust, Risk, and Security Management) are key to making AI-based technologies within the digital finance sector secure, accountable, and regulatively compliant (Habbal et al., 2024; Tasatanattakool et al., 2024).

B. AI in EA-Based Service System Development

AI in the development of EA-based service systems plays a crucial role in optimizing and automating business processes. By integrating AI into EA, organizations can leverage big data analysis, more accurate predictions, and automated decision-making. AI aids in data processing, pattern identification, and providing recommendations to improve service efficiency. The application of AI in EA enables more efficient project planning and management, accelerates decision-making, and enhances the quality of services offered, making the system more adaptive and scalable to changing business and technology needs (Takeuchi et al., 2024).

C. Enterprise Architecture for Digital Transformation

Alghamdi (2024) analyzes the significant contribution of EA to the success of Digital Transformation at the international level. Using a meta-analytic approach, the study identifies patterns of strategic alignment and operational impact of EA. It also highlights the importance of organizational culture, technology integration, and regional economic factors as critical determinants of EA practices in DT initiatives. The findings suggest that a well-structured EA can enhance the success of DT by managing the complexity of the digital ecosystem and implementing advanced technologies such as AI, IoT, and Blockchain

This article explores the important role of EA in facilitating DT initiatives by enhancing organizational agility, optimizing resource utilization, and driving innovation. The study examines how EA frameworks, such as TOGAF and Zachman, support strategic planning, technology integration, and change management in complex organizational environments. The research emphasizes that a well-implemented EA strategy is crucial for driving successful and sustainable digital transformation (van de Wetering et al., 2021).

D. Adaptive EA for Digital Organizations

(Babar & Yu, 2023) introduced an adaptive Enterprise Architecture (EA) framework built on a multi-level dynamic approach and autonomous actor involvement. This model is designed to strengthen the development of responsive, decentralized, and data-oriented digital businesses. This approach provides structural flexibility for organizations to adjust their architecture in a modular and capability-based manner, in accordance with rapid changes in the business environment. This finding is very relevant to the strategy adopted by FinLy in building a scalable, agile business architecture that is aligned with AI-based digital design principles.

E. TOGAF and ACMM-Based ERP Design

Triyanto & Supriyanto(Triyanto & Supriyanto, 2024)demonstrated how the implementation of an Enterprise Resource Planning (ERP) system design built on the TOGAF framework can improve service efficiency and the orderliness of information technology structures in organizations. This study emphasizes that TOGAF-based architecture not only strengthens interoperability between systems but also enables high modularity that facilitates continuous development and integration. This finding is in line with the needs of the FinLy system, which prioritizes a flexible, standardized, and easily customizable architecture to support various AI-based financial service scenarios.

F. Digital Transformation in Government Institutions

Purawidjaja et al., (2024)analyzed the use of the ArchiMate modeling language in supporting the digital transformation process in the Ministry of Communication and Informatics (KOMINFO) environment. This study underlines the effectiveness of the Enterprise Architecture (EA) approach in aligning the interests of various stakeholders, designing a structured digital service blueprint, and managing public service capabilities systematically. This approach demonstrates how EA can be used as a strategic tool in the government sector to improve service efficiency, governance and accountability, and is relevant for application in the context of an enterprise such as FinLy that demands cross-process integration and architectural flexibility.

G. EA Development for Fintech SMEs

Safitri et al., (2024) bring to the forefront the crucial role of Enterprise Architecture (EA) in enabling digital transformation in the BPR industry and small and medium enterprises (SMEs) within the banking sector. From this research, it is confirmed that creating a systematic IT blueprint architecture and business processes are essential prerequisites in delivering efficient, scalable, and sustainable digital services. These findings are extremely relevant to FinLy as a startup company that is building an architectural foundation from the ground up, considering the need for a modular, agile, and easily evolved structure to respond to market forces and regulations in the digital finance industry.

H. Use of AI in Modern Finance

(Wang, 2024; Wu, 2024b)write about an in-depth examination of using artificial intelligence (AI) across various strategic domains of the banking sector, including algorithmic trading, credit scoring, and predictive risk management. In this research, it is shown how the embedding of AI models improves the accuracy of decision-making and accelerates the process of analysis in real time. In financial product design, such a predictive framework forms the basis for designing adaptive and tailored solutions. Such outcomes

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support FinLy's vision of developing a generative system to generate AI-based financial products that are responsive to each customer's unique profile and needs.

I. AI Governance and Ethics

The research paper AI in the Financial Sector: The Line between Innovation and Governance discusses in detail the application of artificial intelligence (AI) in the financial sector, considering its strengths, intricacies, and ethical problems that it poses (Owolabi et al., 2024; Ridzuan et al., 2024). It concentrates on highlighting the importance of an AI framework of governance to encompass aspects like transparency, accountability, and compliance with respective regulations. To this effect, FinLy as a start-up developing AI-based design solutions must adopt responsible and inclusive AI governance approaches to win for sustainability of services as well as consumer trust.

J. Revolutionizing Financial Management through AI

The paper study Revolutionizing Financial Management: Unleashing the Power of AI for Sustainable Growth highlights the crucial role of artificial intelligence (AI) in improving the efficiency of portfolio management, predictive analytics, and tactical decision-making in the financial sector (Alfzari et al., 2025; Bhokare et al., 2024). The study shows how AI integration enables companies to optimize resource allocation and control risk more effectively, thereby supporting more sustainable and efficient corporate practices. In this context, FinLy can leverage the findings to design innovative, adaptive, and personalized financial services, by leveraging AI-based generative systems to meet increasingly complex and dynamic customer needs.

III. METHODOLOGY

A. Research Approach: Design Science Research (DSR)

This research uses the Design Science Research (DSR) approach as the main framework. DSR is a methodology that focuses on the creation and evaluation of artifacts as solutions to practical problems, while contributing to scientific knowledge. In this context, the designed artifact is a TOGAF-based business architecture for FinLy, a fictional company constructed to represent real challenges in developing AI-based financial product design solutions. The DSR approach was chosen because it can facilitate the iterative process between design, implementation, and evaluation.

The application of DSR in this research is carried out through three main stages: (1) formulation of problems and design objectives, (2) development of artifacts in the form of business architecture models, and (3) evaluation of artifacts using strategic and technical criteria. FinLy is used as a simulation object to bridge theoretical design and realistic industry needs, which makes the results of this research more applicable.

B. TOGAF Framework

The TOGAF (The Open Group Architecture Framework) framework is used as the primary approach in developing business architecture. TOGAF consists of eight main phases in the Architecture Development Method (ADM) cycle, namely:

1. Preliminary Phase: Establishing principles, frameworks, and initial architectural capabilities.
2. Phase A – Architecture Vision: Determining the scope, stakeholders, and overall architectural vision.
3. Phase B – Business Architecture: Developing a business architecture model including capabilities, value streams, and processes.
4. Phase C – Information Systems Architectures: Designing application and data architectures.
5. Phase D – Technology Architecture: Determining infrastructure and technology platform requirements.
6. Phase E – Opportunities & Solutions: Identifying potential projects, solutions, and implementation plans.
7. Phase F – Migration Planning: Developing a roadmap and transition strategy.
8. Phase G – Implementation Governance: Managing the implementation and compliance with the architecture.
9. Phase H – Architecture Change Management: Addressing continuous changes to the architecture.

In this study, the focus is given to three phases:

1. Phase A is used to establish FinLy's strategic vision and value proposition in the context of AI-based financial product innovation.
2. Phase B is used to define and map FinLy's business capabilities, process structures, and revenue streams.
3. Phase E is used to identify digitalization opportunities and implementative solutions, including cloud-native system integration and generative AI.

Although other phases are not used explicitly in this study, the TOGAF cycle is used as a conceptual reference so that the architecture model remains in line with the principles of sustainable enterprise architecture development. The architecture model is then visualized using the ArchiMate modeling language, to comprehensively describe the relationship between capabilities, business processes, applications, and technologies.

C. Data Collection Sources and Techniques

The data used in this study were obtained from FinLy's internal artifacts, which were iteratively developed by a fictional team of architects. The artifacts include:

1. Jasper Report: Documentation of FinLy's business architecture and value proposition.
2. ArchiMate Model: TOGAF-based architectural visualization.
3. Business Model Canvas (BMC): Representation of the business model that links the value proposition to customer segmentation and revenue streams.
4. Presentation Slides: Communication of the company's business strategy and core capabilities.

In addition, observations of the TOGAF structure and framework were used to ensure conformity between the design and industry standards.

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D. Architecture Evaluation Techniques

The evaluation of FinLy's business architecture aims to ensure that its design supports both strategic goals and operational effectiveness. Three complementary evaluation approaches were used: Strategic Fit, Model Evaluation, and Fit-for-Purpose.

The Strategic Fit assessment examines the alignment between the architecture and FinLy's vision, mission, and value proposition. It evaluates how the capability structure and business processes support key monetization goals across the ten revenue streams defined in the Business Model Canvas. This ensures that the architecture is not only technically sound but also strategically aligned.

The Model Evaluation approach assesses the internal consistency and integration among architectural elements. It analyzes the connections between business processes (e.g., R1–R5), application components (such as CRM and Project Management tools), and technology infrastructure (e.g., Google Cloud, Oracle DB). The analysis relies on the ArchiMate model to trace relationships and verify that each component contributes meaningfully to the overall value stream.

Lastly, Fit-for-Purpose evaluates the architecture's effectiveness in real-world scenarios. It simulates end-to-end service processes such as product licensing (R1), consulting (R2), exclusive development (R3), and training (R5). The outcome confirms that the architecture is modular, adaptable, and capable of supporting service delivery efficiently. These findings are visually reinforced by the ArchiMate diagrams, which clearly map business capabilities to application systems and show strong coherence between revenue streams and operational domains.

IV. RESULT AND DISCUSSION

A. Business Strategy

FinLy's business model for the business strategy shown in the above figure depicts the business synergy between the company's core competencies and long-term business objectives, specifically driving revenue growth and creating competitive positions in the AI-fueled financial industry. Each capability area ranging from Product Design & Innovation, Monetization & Revenue, Customer Engagement & Service, to Strategic Growth & Market Expansion significantly influences creating customer retention, customer satisfaction, and market share. This provides a solid platform for achieving sustainable revenue growth. The product design and innovation (BC10) and monetization and revenue (BC20) business capabilities create more value in the form of innovative and high-value financial design products. This results in enhanced revenue and customer retention, leading to increased company profitability. Alternatively, the customer engagement and service (BC30) capabilities are focused on enhancing customer satisfaction through adaptive and educative services, which in direct terms supports the growth of market share.

In addition, strategic expansion and market growth abilities (BC40) strengthen FinLy's market position through strategic partnerships, technology displays, and long-term product support. Such an action not only generates greater market exposure but also facilitates long-term sustainability through diversification of revenue streams and dominance of certain high-potential market niches.

By implementing the strategic model shown in Figure 1, FinLy can consolidate product innovation, commercialization strategies, and market expansion into a single business expansion vision. This solidifies FinLy's leadership as an AI-based financial solutions provider while allowing for sustained profitability and competitiveness against continuously rising market disruption.

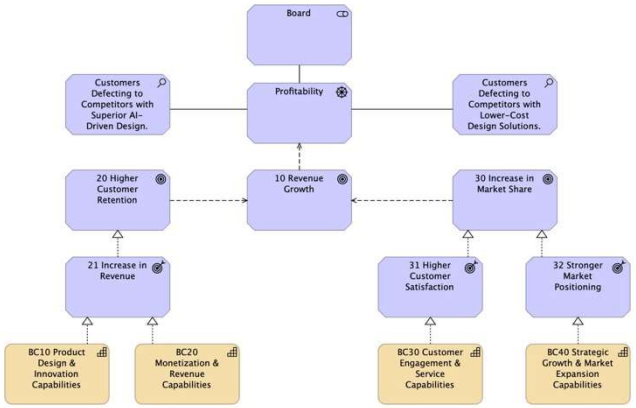

Figure 1. Business Strategy

B. Business Model Canvas

PT FinLy's business model shown in Figure 2 is anchored on delivering innovative, personalized, and adaptive financial product design solutions by integrating generative AI with TOGAF architectural principles. The company's core revenue stream is R1: Product Design License Sales, which provides AI-based, ready-to-use digital design templates to banks (C1), fintech firms (C2), and multi-finance institutions (C3). This stream is supported by S1 Generative AI platforms, S2 TOGAF specialists, and S3 cloud providers, with internal execution by U1 product development and U2 licensing teams.

The second key stream is R2: Design Consultation Services, targeting financial institutions (C4), corporate enterprises (C5), and startups (C6). FinLy collaborates with S4 AI/design consultants and S5 design research bodies, utilizing U3 consultants skilled in AI, TOGAF, and UI/UX, along with U4 data analytics tools, to deliver evidence-based, user-centric design guidance.

R3: Exclusive Product Development serves high-value clients such as premium banks (C7), wealth management firms (C8), and public sector bodies (C9). This involves creating tailored design systems with support from S6 software developers and S7 blockchain experts, and relies on U5 in-house UI/UX teams and U6 prototyping tools for secure, scalable outcomes.

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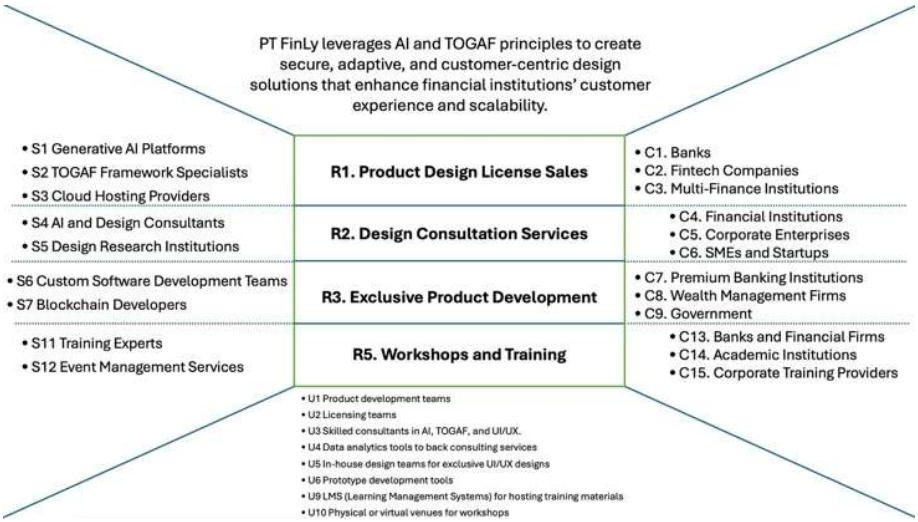

Figure 2. Business Model Canvas

Lastly, R5: Workshops and Training focuses on knowledge transfer for clients such as banks (C13), academic institutions (C14), and corporate trainers (C15). This is delivered through S11 training experts, S12 event support, and internal resources like U9 LMS platforms and U10 hybrid venues, helping expand digital capabilities across financial sectors.

C. Business Capability

PT FinLy's business capabilities shown in Figure 3 are structured into four core domains following the TOGAF framework: BC10 Product Design & Innovation, BC20 Monetization & Revenue, BC30 Customer Engagement & Service, and BC40 Strategic Growth & Market Expansion. These domains enable FinLy to respond effectively to challenges in the digital financial sector by leveraging AI-based design solutions and adaptive business models.

BC10 Product Design & Innovation focuses on building competitive advantage through four main capabilities: AI-Powered Financial Product Design (BC11), Customizable Digital Asset Creation (BC12), Generative AI for UI/UX Optimization (BC13), and Scalable & Adaptive Product Development (BC14). These support revenue stream R1: Product Design License Sales. FinLy commercializes modular AI-generated design assets under licensing schemes tailored for financial institutions. The iterative cycle of design, prototyping, and validation ensures efficient, secure, and integrable solutions.

The BC20 Monetization & Revenue domain enhances financial outcomes through services aligned with R2 (Design Consultation), R3 (Exclusive Product Development), and R7 (Subscription-Based Products). It includes BC21 to BC24—covering commercialization strategies, subscription offerings, and marketplace asset sales. FinLy customizes design-based monetization packages according to client needs, enabling flexible pricing and hybrid service delivery models suited to both premium and emerging markets.

BC30 Customer Engagement & Service supports R5: Workshops and Training. It encompasses capabilities like AI-Enhanced Customer Experience (BC31), Consultation & Advisory (BC32), Training Services (BC33), and post-sales Support (BC34). Through tailored educational content, hands-on workshops, and continuous assistance, FinLy empowers clients to implement and benefit from AI-based design systems, ensuring knowledge transfer and user adoption.

Lastly, BC40 Strategic Growth & Market Expansion enables FinLy to scale through partnerships and innovation showcases. This domain includes BC41 (Strategic Partnerships), BC42 (Conference Participation), BC43 (Design Tool Sales), and BC44 (Long-Term Support). These capabilities support revenue streams such as R6, R8, R9, and R10. Through industry events, strategic alliances, and long-term service agreements, FinLy strengthens market positioning, brand trust, and client retention.

Overall, FinLy's business architecture links technological design innovation with a scalable and sustainable revenue model. This structure reinforces FinLy's strategic vision to be a leader in AI-based financial product design and a trusted partner for financial institutions navigating digital transformation.

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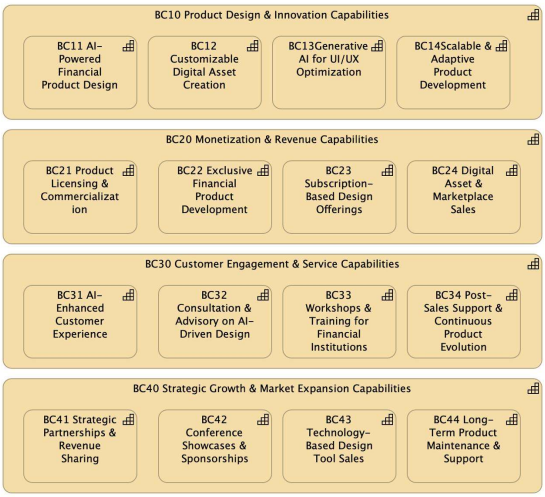

Figure 3. Business Capabilities

D. Business Process

The architecture diagram "R1. Product Design License Sales" in Figure 4 represents a structured business process flow that includes layers of business processes, supporting applications, and technology infrastructure. This architecture reflects FinLy's systematic approach to managing AI-based design product license sales, from customer initiation to after-sales support management and contract renewal. With comprehensive integration between components, this architecture aims to deliver automation, operational efficiency, and superior customer experience.

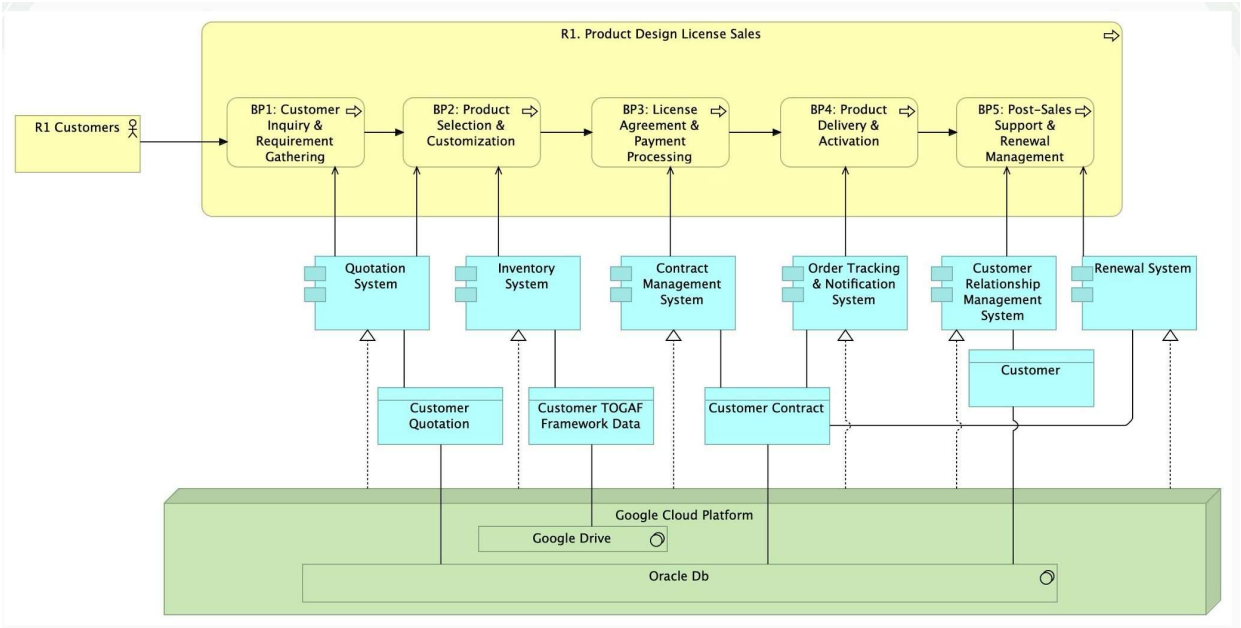

Figure 4. Business Process R1

The Figure 5 illustrates an organized flow with a combination of business processes, application systems, data objects, and technology infrastructure that assist in managing design consulting services efficiently. This framework attempts to provide a value-added consultative service by assigning utmost importance to AI technology and TOGAF architectural principles while increasing customer satisfaction and building long-term relationships.

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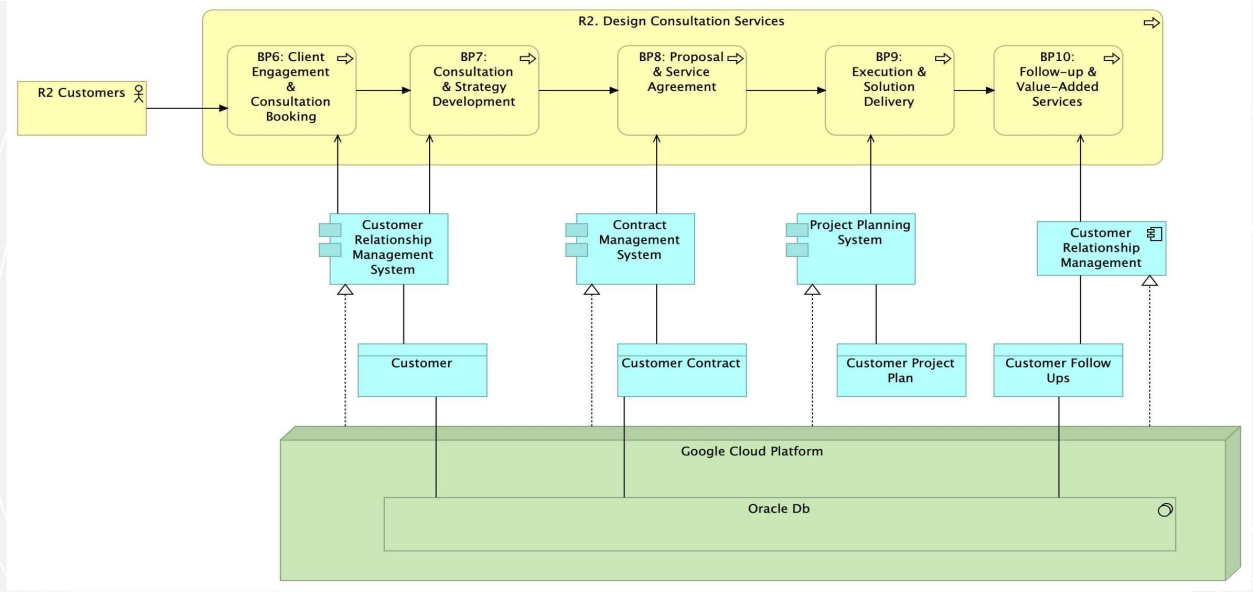

Figure 5. Business Process R2

The architecture diagram in Figure 6 illustrates the end-to-end workflow in developing an exclusive design product for premium clients. This process combines elements of business processes, application systems, data management, and technology infrastructure to ensure that each stage of development is structured, documented, and responsive to the unique needs of the customer. This model is specifically designed to provide high-value services to strategic client segments such as priority banks, wealth management institutions, and government agencies.

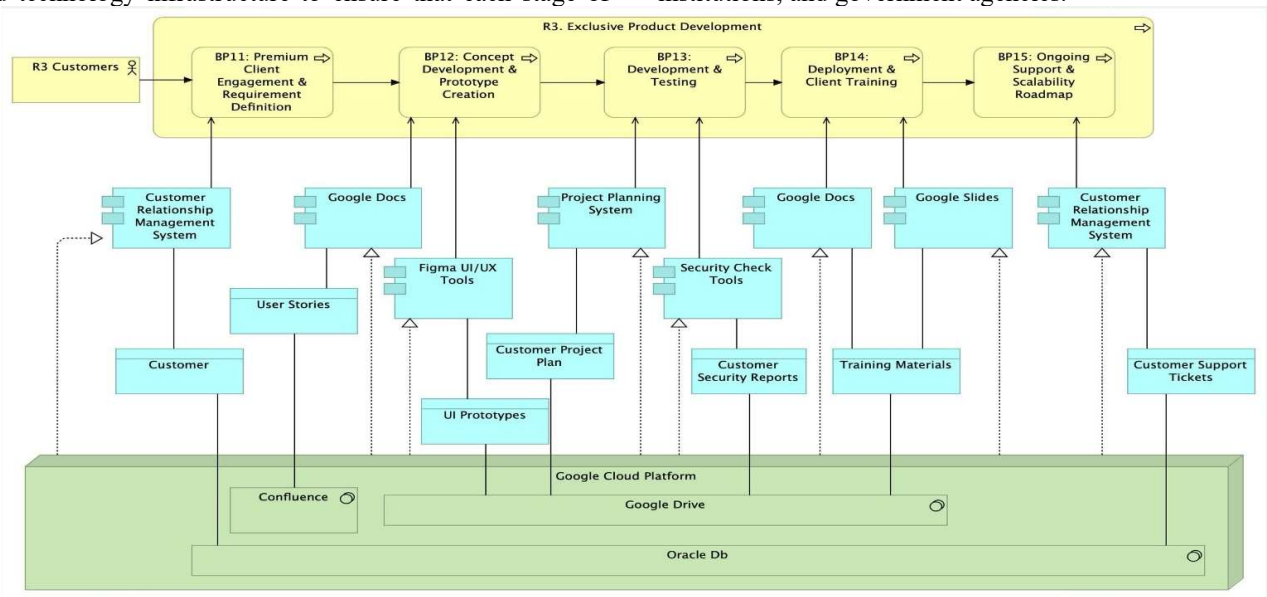

Figure 6. Business Process R3

The R5. Workshops and Training business process architecture shown in Figure 7 is designed to systematically manage the entire training and workshop cycle, from curriculum planning to post-training follow-up. By integrating business processes, application systems, data objects, and technology infrastructure, FinLy is able to provide an efficient, interactive, and sustainable learning experience for customers in the financial, academic, and corporate sectors.

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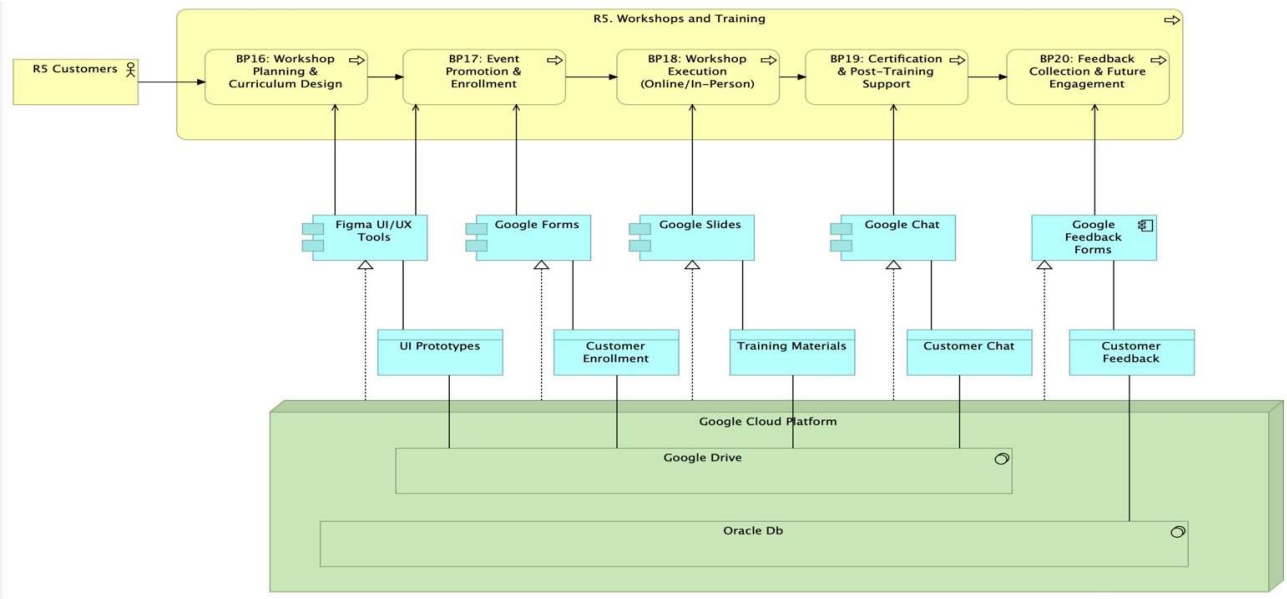

Figure 7. Business Process R5

E. Architecture Evaluation

The evaluation of PT FinLy's business architecture confirms its strong alignment with the company's strategic vision as a pioneer in AI-based financial product design. The architecture is structured into four key domains—product design, monetization, customer engagement, and market expansion—enabling FinLy to offer modular and integrated digital services. These capabilities address the evolving needs of financial institutions in a flexible and scalable way.

Each of the five main revenue streams (R1–R5) is supported by a digital end-to-end business process, covering customer interaction, service implementation, and post-delivery support. This ensures that operations are not only efficient but also optimized for agile monetization strategies such as licensing, consultation, and subscription. The architecture allows FinLy to tailor services based on client complexity while maintaining high adaptability to technological advancements and regulatory changes.

Notably, capabilities like AI-Enhanced Customer Experience and Post-Sales Support reflect FinLy's commitment to continuous improvement and client satisfaction. The structure promotes long-term engagement through feedback loops, scalable solutions, and ongoing technical upgrades.

With TOGAF as its foundation, the architecture effectively bridges strategic goals and technology execution. It integrates business processes, applications, and cloud infrastructure, including Google Cloud Platform, Figma, and Oracle DB. The novelty of FinLy's approach lies in combining enterprise architecture, generative AI, and digital monetization into a single cohesive operational model. This makes FinLy a leading example of how a financial startup can scale sustainably, deliver innovation, and remain resilient in the digital financial industry.

V. CONCLUSION

PT FinLy's TOGAF-based business architecture has proven effective in supporting its strategic role as a provider of AI-driven financial product design solutions. The capability model, which covers product design, monetization, customer service, and market expansion, establishes a modular and scalable structure that allows FinLy to deliver customizable services to diverse financial market segments. Its integration with technologies such as Google Cloud, Figma, Google Workspace, and Oracle Database provides the operational backbone for secure, fast, and efficient execution. Each revenue stream (R1–R5) is supported by well-documented processes that enable end-to-end digital service delivery from planning to post-sales.

A key innovation of this architecture is the synergy between the TOGAF framework, generative AI design systems, and a digital monetization strategy. This makes FinLy a strong example of how financial startups can align strategy, technology, and services in a coherent and replicable model. The architecture not only supports current operations but also positions FinLy for sustained growth and long-term competitive advantage in the digital financial design industry.

To enhance its implementation, FinLy is advised to proceed with TOGAF Phase C (Information Systems Architecture) and Phase D (Technology Architecture), focusing on strengthening interoperability, system security, and performance. Adaptive governance frameworks, particularly for risk management, data security, and regulatory compliance (OJK, PDP Law), should also be developed. In addition, pilot testing with industry partners and building a digital prototype will help validate the architecture and attract stakeholders. Incorporating an AI

lifecycle management system will ensure model relevance, auditability, and ongoing improvement.

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