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Indosat Digital Telco Service Enhancement Using Design Thinking Approach: A Case Study of MPWR (Empower)

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Abstract

The telecommunication industry in Indonesia is experiencing dynamic changes with the emergency of innovative digital telco services. Indosat, as one of Indonesia's top telco providers, must adapt to these developments and create better digital telco services to meet customer needs and desires. The goal of this project is to use Design Thinking approaches to create a new digital telco service for Indosat. Understanding user demands and creating innovative and practical solutions are made easier with the help of Design Thinking approach. The study used a descriptive qualitative research methodology and featured a case study about the development of a new digital telco service for Indosat that would replace "MPWR" (pronounced empower). MPWR is an application-based service for mobile prepaid cards that allows users to buy various digital products and services, such as reload, data packages and other digital products. This research uses a variety of research techniques, such as interviews, observation, and brainstorming, to gather data and insights into the needs and preferences of users. This data and information are then analyzed and used to develop a prototype of new digital telco services. Utilizing user testing techniques, this new digital telco service prototype was assessed. Test results indicate that this prototype is well received by users and has the potential to develop into a profitable digital telco service. This research demonstrates how Indosat may better address customer needs and offer digital telco service by implementing a Design Thinking methodology. The new digital telco service prototype developed in this research can be a good example for Indosat in developing innovative and competitive digital telco services.

Keywords: Design Thinking, Digital Telco Service, Indosat, MPWR, Prototype.

1. Introduction

With Indonesia's economic growth and rapid technological advancements, particularly in internet usage, the country has become one of the largest global internet markets, boasting 196.71 million users as of 2020 (APJII, 2020). Mobile data consumption also surged during the Covid-19 pandemic, with average usage rising to 14.6GB per month (Rizzato & Fogg, 2021). This shift in consumer behavior has driven the demand for accessible and innovative digital telecommunications services. In 2020, Indosat launched its MPWR Digital Telco service to cater to the digital generation's lifestyle needs, offering promotions across various

categories and easy access to telecommunications services. However, the service was discontinued in 2021, with users migrating to the myIM3 app. This termination highlights the need for Indosat to address key challenges and align its services more closely with customer expectations.

This study adopts a Design Thinking approach to explore the challenges and user needs in developing a new innovative Digital Telco service. It aims to identify core problems, generate creative solutions, and provide actionable recommendations to Indosat, including prototype development aligned with user expectations. The research offers valuable insights for academia and practitioners while providing operational strategies to enhance Indosat's competitiveness in the dynamic digital landscape.

2. Literature Review

Strategic management involves organizational leaders formulating and implementing strategies to achieve objectives. Its key stages include situation analysis, goal setting, strategy formulation, implementation, and monitoring (Henry, 2018). Strategic thinking plays a central role, helping organizations set measurable goals, understand competitors, adapt to environmental changes, and improve performance through efficient resource use.Digital transformation involves adopting digital technology to enhance processes, products, and services. Verhoef et al. (2021) highlight how it reshapes consumer expectations and behaviors through business model innovation. It entails not only change but also its nature, direction, and impact, influenced by factors like organizational culture, industry standards, and regional dynamics. As businesses embrace the digital era, understanding change management, technology adoption, and customer-focused strategies is essential.

Since the 1960s, experts have explored Design Thinking as a creative problem-solving approach. John E. Arnold introduced the term in his book Creative Engineering (1959), and L. Bruce Archer later advocated for a systematic application of Design Thinking in 1965. Herbert Simon further defined design as a creative problem-solving method in The Sciences of the Artificial (1970) (Michalos & Simon, 1970). Tim Brown outlined the stages of Design Thinking—Empathy, Define, Ideate, Prototype, and Test—in the Harvard Business Review (2008). Case studies, such as the development of new products for the Leradia project (Syifa, 2022) and a mobile app for the Athens Numismatic Museum (Chasapis et al., 2023), demonstrate its effectiveness. Organizations like General Electric and SAP have successfully applied this methodology to align strategies and accelerate product development. Design Thinking significantly influences management theory and practice, serving as a tool for fostering innovation in education, public services, technology, and entrepreneurship (Ghina & Afifah, 2021).

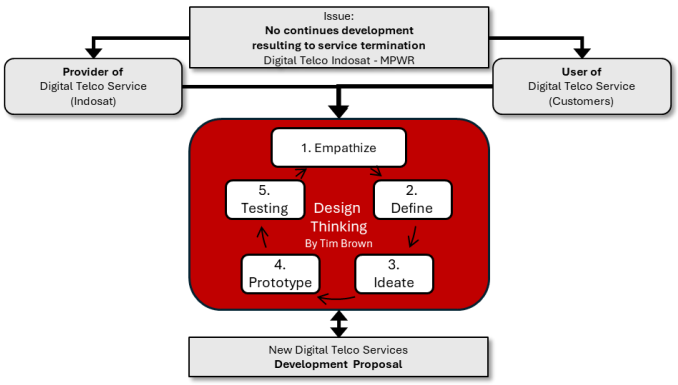

***Figure* 1 Research Framework**

Source: Analysis by Author (2024) adopted from Tim Brown

3. Research Method

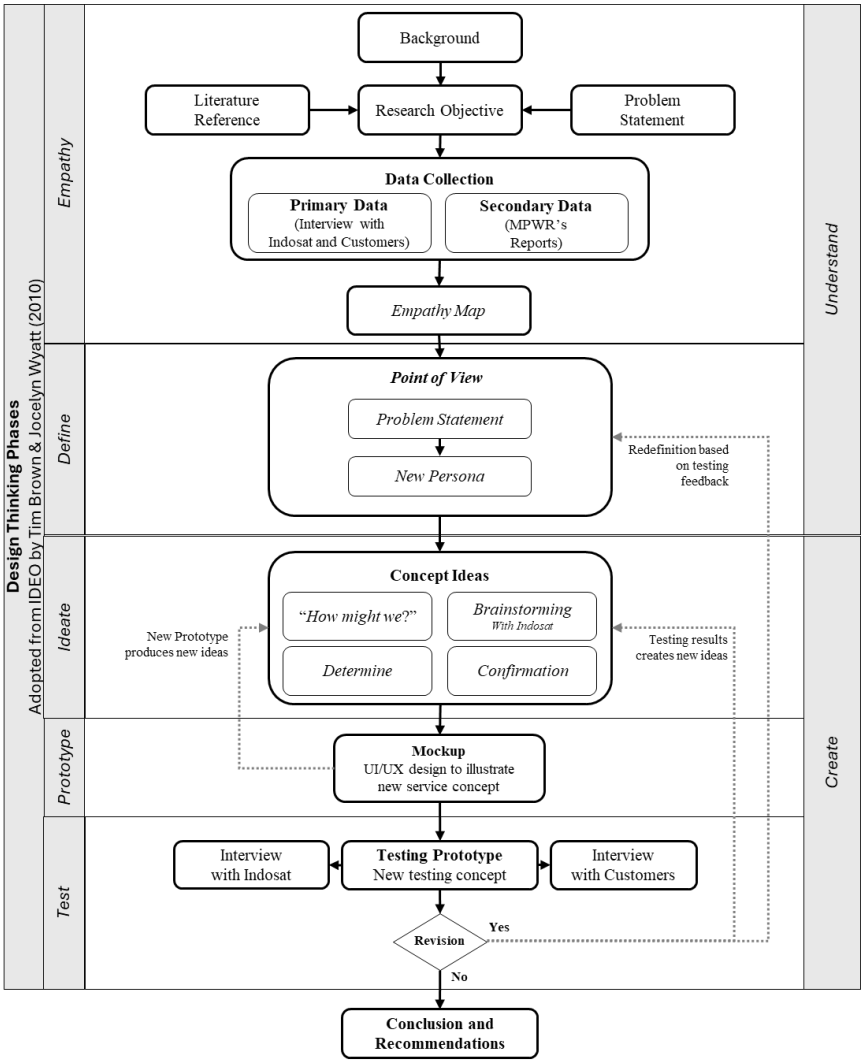

***Figure* 2 Research Phase**

Source: Analysis by Author (2024) adopted from Tim Brown

This study adopts a descriptive qualitative methodology with a case study approach to analyze the MPWR application, using cross-sectional data from 2020. Data collection involved observation, in-depth interviews, and document analysis to ensure an unbiased examination of the phenomenon within a non-contrived research setting. Following Creswell (2014) and Sekaran & Bougie (2016), the study aims to explore how individuals or communities address specific issues through scientifically grounded theories. The findings are expected to contribute a conceptual framework for digital services aligned with customer needs, informed by interview insights.

4. Result and Discussion

4.1 Result

a. Empathy

Based on interview results, responses from Indosat's stakeholders were categorized to analyze their perspectives on MPWR (Empower) services. The analysis focused on identifying challenges encountered, opportunities available, pain points and gains experienced in delivering the service. a) Rudi serves as the System Architect, b) Tepi as the Product Developer, c) Diana oversees Customer Experience. These experts contribute to critical functions essential for supporting and enhancing MPWR service, including operational management, marketing strategies, digital channel oversight, and customer journey optimization. Collectively, their roles ensure that MPWR services align with consumer expectations and remain competitive within the digital telecommunication market.

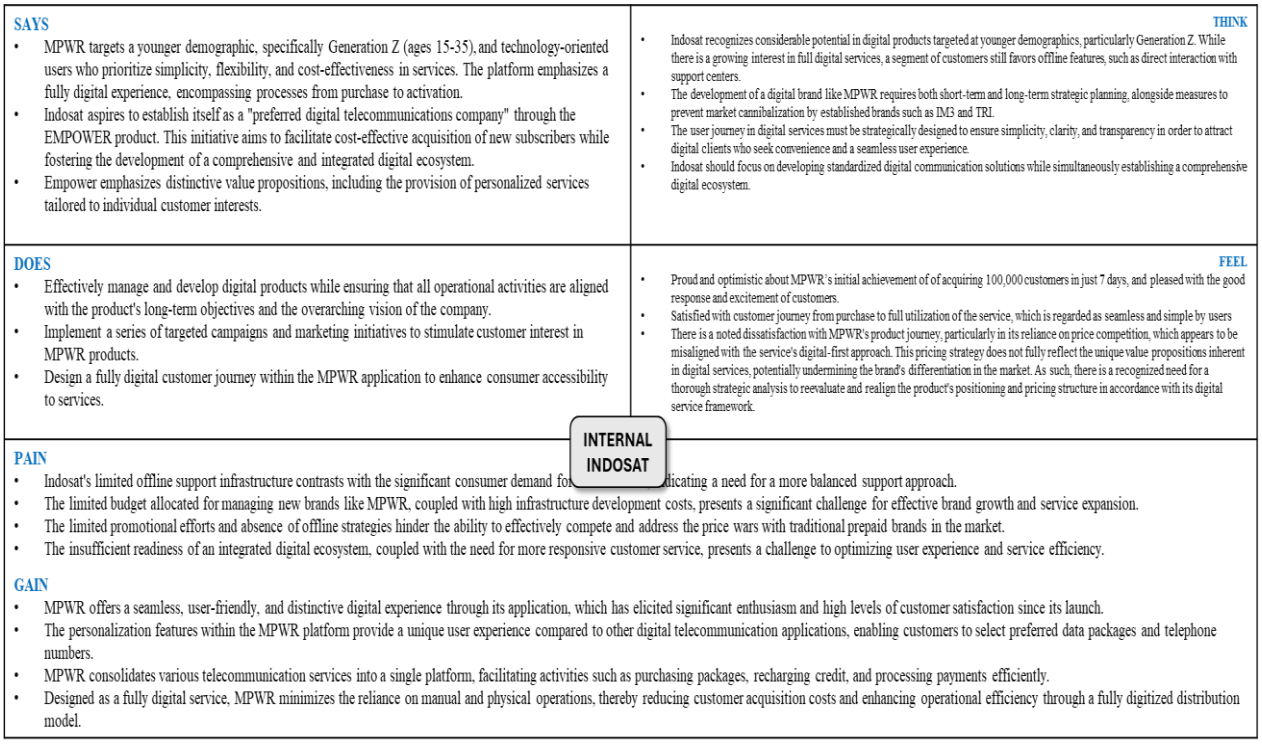

***Figure* 3 Empathy Maps**

Source : Analysis by Author (2024)

The Empathy Maps reveal that MPWR presents several advantages aligned with Indosat's strategic objectives of delivering digital telecommunications services that are accessible, cost-efficient, and effective. Furthermore, MPWR emphasizes customer personalization and added value. However, despite promising initial outcomes and strong customer interest in the digital service experience, the development of digital telecommunications services faces significant constraints. These include limited infrastructure support, intense price competition, challenges in establishing an integrated digital ecosystem, and a lack of product differentiation within the market.

b. Define

The Problem Statement for MPWR (Empower) is clarified through interview insights, highlighting challenges ("PAIN" points) in the Customer Journey, based on systematically compiled customer feedback as follows:

Table 3. Problem Statement

No	Feedback	Problem
1	– Elista and Rangga felt that the **application's look was less appealing and far less adaptable than other telco services that are easier to use**. Taufan added that compared to other providers, the **application tends to be less user-friendly and less intuitive**. – Amara and Alan claim that **the app's user experience was identical to other telco providers, with no appreciable improvement**.	Appearance (UI/UX)
2	– Amara and Rangga expressed dissatisfaction about the application's severe limits and lack of flexibility. – Taufan pointed out that the absence of other features and benefits made it difficult to maintain long-term customer engagement even though MPWR's affordable price and generous data quota initially drew customers in.	Limited products offers.
3	– Alan thought that **MPWR was just a copy of traditional telco services and didn't provide any real advantages**. Both Rangga and Taufan agreed that **MPWR lacked any significant innovations that would have distinguished it from competitors**. – Elista didn't think the **MPWR application has any unique selling points** that would convince her to recommend it to others.	Lack of uniqueness and significant innovation
4	– Alan and Taufan stated that **the non-telco benefits offered by MPWR**, such as discounts on streaming services or other digital lifestyle benefits, **failed to resonate with their preferences and needs**. – Furthermore, Elista **didn't think the non-telco benefits offers a worthwhile value**.	Additional benefits were not relevant
5	– Amara and Alan noticed that the **customer service associated with the application was slow and unresponsive**, and the **support services provided through the application were unclear**.	Customer Service slow and unresponsive
6	– Rangga claimed that there is no tracing capability in **the MPWR application to monitor the progress of transactions,** or the delivery of SIM card ordered. – Rangga added that the absence of modern payment options, such as ShopeePay and Dana, conveyed an impression that the application was behind the curve in term of payment technology.	Lack of features that are actually needed and modern
PROBLEM STATEMENT		

Indosat's Digital Telco Service, called MPWR (empower) failed to provide a satisfactory user experience because of a limited selection of products, a difficult-to-understand application design, and lack of innovation in both products and services. This service didn't attract customers in the long term, even it offered big quota with affordable prices. Customers believe that MPWR apps offers no more value compared other providers because it lacks unique features that set it apart from conventional telco services.

Source : Analysis by Author (2024)

The Problem Statement, Empathy Maps, and Customer Journey became the basis for the researcher's discussions with Indosat's team on September 12, 2024. These discussions aimed to explore customer motivations in achieving their objectives, emphasizing long-term aspirations and goals facilitated by products and services rather than merely focusing on how customers use them. The discussion led to the development of a refined customer persona encompassing several key dimensions: (a) Situation, addressing how customers discover and engage with digital telecommunication services; (b) Motivation, examining the underlying reasons for customers selecting and utilizing these services to support their digital lifestyle; and (c) Expected Outcome, outlining customer expectations from digital telecommunication services, including substantial data packages, seamless transactions, and flexible quota management to facilitate their daily activities.

Researchers employ the Jobs to Be Done (JTBD) toolbox, which is divided into functional, emotional, and social work and describes not just physical activities but also the outcomes or goals that consumers wish to achieve.

c. Ideate

The Ideate phase within the Design Thinking process focuses on generating a diverse range of potential solutions to address a predefined problem. This phase utilizes tools such as the *Jobs to Be Done* framework, the formulation of a *Problem Statement*, and the development of *How Might We Questions* to guide innovative and targeted solution development.

1) Brainstorming

To start the Ideate Phase, a brainstorming session was conducted by the researcher with 3 (three) members of Indosat's experts who were responsible for developing MPWR with a focus on digital product design, system architecture, and user journey optimization. In this brainstorming session participants are encouraged to propose innovative ideas aimed at delivering a novel experience tailored to "Akbar," a newly identified persona representing a prospective customer of Indosat's Digital Telco service. The focus was directed toward addressing the challenges outlined in the preceding phase, articulated through the "How Might We" (HMW) question: **"How can we design a Digital Telco service that is user-friendly, intuitive, and equipped with features that provide comprehensive control, ensuring that Akbar feels at ease and can**

efficiently access or conduct transactions within the application to meet his digital lifestyle needs?"

2) Categorization

All 24 suggestions provided by Indosat's experts were systematically organized into two primary categories: Applications and Products. Following the categorization, similar suggestions were coded and synthesized, resulting in 19 unique ideas. Among these, 17 were attributed to the Applications category, while 2 were classified under Products. The Applications category includes proposals focused on the user interface (UI), user experience (UX), and other application-related features. The Products category comprises recommendations pertaining to customer offerings and product development.

3) Dot Voting

Dot Voting is a structured technique utilized within the Design Thinking process to identify and prioritize the most valuable ideas, particularly when a substantial number of concepts emerge during the Ideation stage. This method facilitates democratic participation, allowing all participants in the brainstorming session to contribute to the selection of optimal ideas. Following the Dot Voting process, the 19 unique ideas were evaluated and categorized based on their value and required effort. The assessment was mapped onto four quadrants: Quadrant 1, representing High Value and Low Effort (**Do Now**); Quadrant 2, representing High Value and High Effort (**Do Next**); Quadrant 3, representing Low Value and Low Effort (**Do Later**); and Quadrant 4, representing Low Value and High Effort **(Don't Do**).

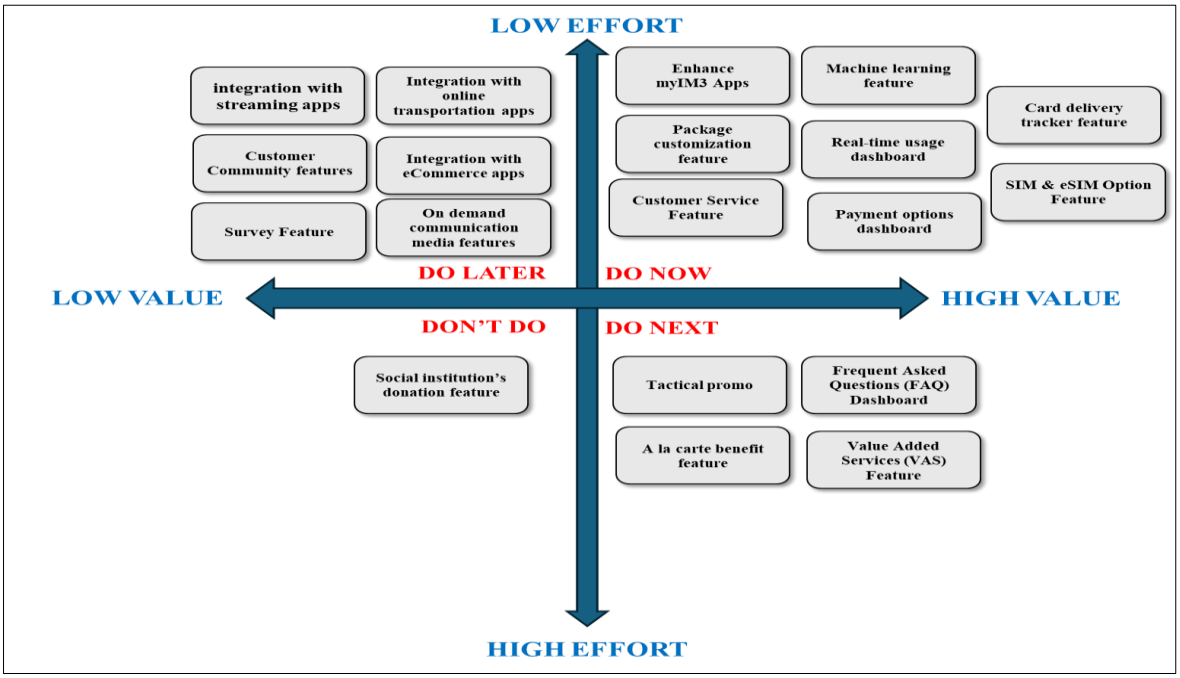

***Figure* 4 Matrix 2x2**

The results of the Dot Voting process are subsequently reviewed and discussed to ensure that no viable ideas are overlooked. Adjustments are made as necessary, incorporating final input from all participants in the brainstorming session. To enhance understanding, the outcomes are visually represented using a 2x2 matrix, as illustrated in Figure 4. This matrix provides a clear mapping of the filtered idea proposals, categorizing them based on their assessed value and required effort.

The conclusions drawn from the brainstorming sessions, idea categorization, and the outcomes of the Dot Voting process, including the development of a 2x2 matrix, are synthesized to summarize the results of the Ideation phase. These findings are presented in tabular form (Table 5) to provide a concise and structured overview of the prioritized ideas and their respective classifications based on value and effort.

No	Categories	Ideas	Description
1	*System* & Antarmuka (UI/UX)	*Enhance myIM3 Apps*	Enhance Indosat's existing application system, named myIM3 apps, involve aligning the interface design with the established theme, font, styles, and color scheme of myIM3 platform. For the new Digital Telco service, myIM3 platform will be integrated with User Agnostic system, enabling broader accessibility by allowing application to cater diverse customers profiles without specific personalization.
2	Feature	Machine Learning Feature	Enhance the existing machine learning system that was previously used for MPWR apps, by aligning latest data of market trends and evolving customer preferences to ensure that the system remains responsive and relevant. This Machine Learning feature is employed to identify customer profiles based on preferences and personalize package recommendation, without requiring personal information collections.
		Package Customization Feature	Display an expanded range of packages offering to provide greater options and enhance the flexibility of package selection for customers.
		SIM & eSIM Option Feature	Machine Learning system enables the platform to detect device types and capabilities. For customer with eSIM capable device purchase new number, the system will offer eSIM as the starter pack form instead of SIM card.
		Payment Dashboard	Enhance the existing payment dashboard by integrating an expanded range of modern payment methods (bank transfer, credit cards

			and e-wallets) and also provide a seamless and comprehensive payment process journey.
		Order Tracking Feature	Enhance the platform by integrating a feature that enable customer to track the delivery status of SIM card order to customer address, with real-time updates linked to courier company's tracking system.
		Real-time Usage Dashboard	Enhance the existing usage dashboard with real-time status of customer's subscription type, remaining quota and balance.
		Customer Service Feature	Enhance the existing dashboard with a Customer Service feature integrated with WA chatbot's.

Source: Analysis by Author (2024)

d. Prototype

The problem statement highlights that MPWR (Empower), has struggled to provide a satisfactory user experience due to insufficient innovation in its products and services, a user interface that is not intuitive, and a limited range of offerings. To address these shortcomings, the existing *myIM3* application was reimagined and expanded into the new Digital Telco Service application. Enhancements include features for seamless product purchases, order tracking, personalized user journeys, and an appealing number selection experience.

IM3 users are currently the main users of myIM3 application. However, the platform has been enhanced to serve new users after the agnostic feature was added. This is accomplished by sending people to the page where they may purchase IM3 numbers and using machine learning algorithms to tailor package offers according to user profiles. In line with the placement of concepts in the 2x2 matrix, the prototypes was created with an emphasis on obtaining quick wins as a first step to produce major impact with less effort works. Furthermore, it was decided that the prototype design would prioritize addressing the most pertinent and important issues during the brainstorming session with Indosat experts. This strategy is to improve the accessibility and user-centric functionality of Indosat's Digital Telco service by providing a more effective and user-centered solution to satisfy the demands of its customers.

The primary objective of Indosat's new Digital Telco service is to deliver personalized and flexible solutions, enhance an intuitive and user-friendly customer experience, and cater to the evolving digital lifestyle demands of its users. To bring this vision into reality, the service incorporates several key features, with the development of the myIM3 application as its central focus. Enhancements include the integration of agnostic capabilities and machine learning technology to identify customer persona and provide tailored offerings based on user profiles. Additional features include package customization with non-telco benefits, options for starter pack in both SIM card and eSIM forms, a broader range of payment methods, and a tracking feature for SIM card

deliveries (Track Order). Furthermore, the application offers a real-time usage dashboard for monitoring data consumption, remaining credit, SMS, and call minutes, along with integrated customer support services.

The implementation of this service is structured into three key phases: application development, user acceptance testing, and the official launch of the new service. This phased approach aims to enhance customer satisfaction, deliver more targeted and relevant promotional offers, foster customer loyalty, and effectively support the growing demands of a dynamic digital lifestyle.

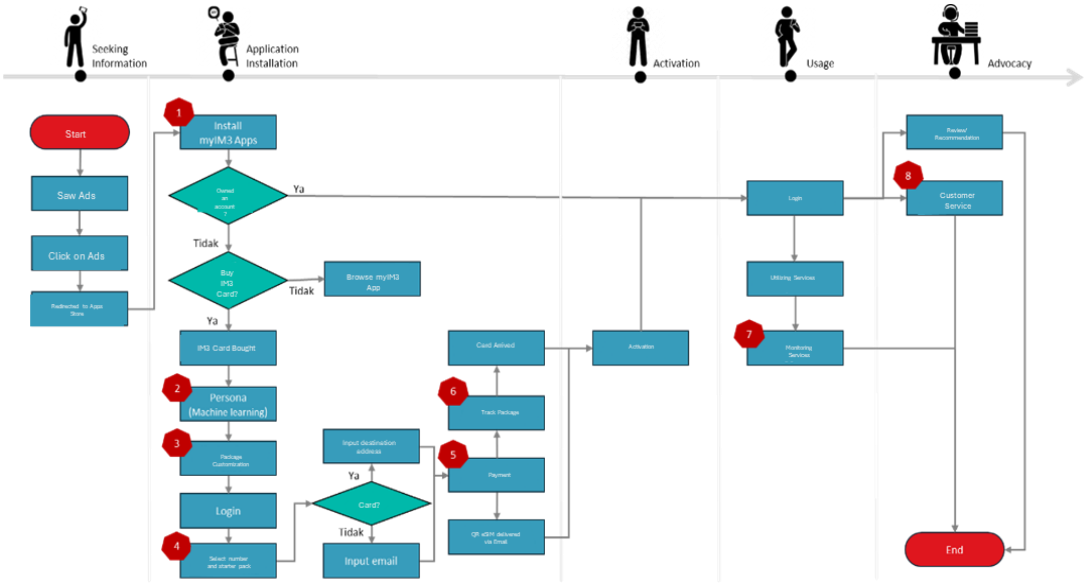

***Figure* 5 User Journey Flow**
Source: Analysis by Author (2024)

Indosat's new Digital Telco service application builds upon the existing **myIM3** platform, incorporating advanced personalization features, aesthetic number selection, product purchase options, and a Track Order feature. By integrating agnostic functionalities, the application extends its usability beyond existing IM3 customers to include new customers, guiding them to the IM3 number purchase page and offering machine learning-driven package customization tailored to new customers' preferences.

Upon receiving and activating the number, the user is officially registered as an IM3 customer and gains access to the application's main interface. This interface provides real-time account information, including the customer's username, phone number, credit balance, data quota, and loyalty program points. Customers are further empowered to purchase data packages, access non-telco benefits through the **Lifestyle** menu, and redeem loyalty points for gifts or vouchers. For customer service accessibility, the application includes an **Indira** feature, which facilitates direct communication with Customer Service agent.

e. Testing

One crucial element in Design Thinking is the testing process, which is used to evaluate the prototype. Before the service officially launched, the primary objective at this point is to get input from actual users, learn how they use it, and identify areas that require improvement.

The prototype of Indosat's new Digital Telco Service was evaluated through interview with four external participants in Focus Group Discussion (FGD) session, all of whom were former MPWR customers. Additionally, an online interview was conducted with one participant who was unable to attend FGD session. Consequently, feedback was obtained from all five external participants, previously interviewed during the *Empathy* stage, regarding the prototype, which was presented via Microsoft Teams.

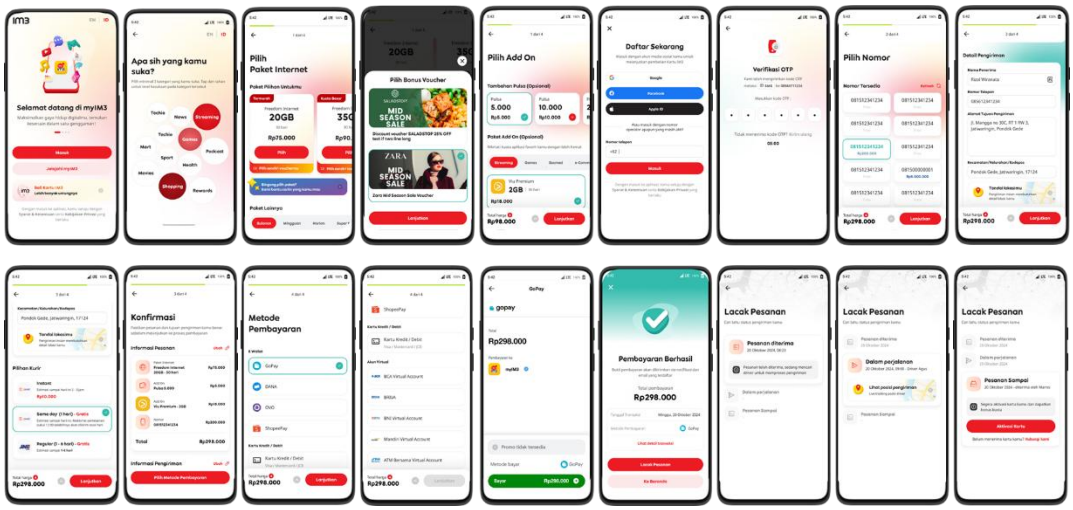

***Figure* 6 Indosat's New Digital Telco Service Interface**

Source : Analysis by Author (2024)

The evaluation of Indosat's Digital Telco service prototype revealed several strengths that were well-received by customers. The application design was praised for its aesthetic appeal, featuring a thoughtfully selected color palette, typography, and a navigation flow that was intuitive and easy to follow. The user experience (UI/UX) garnered positive feedback for its simplicity and user-centric design, minimizing steps required for navigation. The inclusion of personalization features was highlighted as a key advantage, enabling customers to access services that better align with their specific needs. The *Track Order* feature was also favorably compared to similar functionalities on e-commerce platforms, being recognized for its practicality. Furthermore, the application was commended for offering a diverse range of flexible data packages and a comprehensive digital payment system, positioning it as particularly appealing to young, dynamic customers.

Several areas for improvement were identified during the evaluation. The application interface for iPhone devices requires optimization, particularly in resizing design elements to enhance aesthetic appeal. The use of the Indonesian language within the application should also be refined to ensure consistency or include an option for

language settings, thereby improving user convenience. The registration process needs clearer instructions to help new customers. While customers expressed a preference for more diverse shipping options to enhance flexibility, the inclusion of an eSIM feature is also considered a valuable enhancement to ensure the application is up to date with the latest technology.

4.2 Validation and Rehabilitation Testing

The Validity and Rehabilitation Test was conducted using source triangulation, a method that involves cross-verifying data from multiple sources to assess its credibility and validity. Triangulation and Member Check processes were systematically implemented at each stage of the Design Thinking methodology to ensure the accuracy and consistency of the findings.

1) Empathize Stage

   During the **Empathize** stage, the triangulation process was employed to validate the challenges faced and the needs customers' has within Indosat's MPWR Digital Telco. The triangulation analysis, which incorporated three sources of information—internal interviews, external interviews, and document reviews—demonstrated interrelated and valid findings. These sources revealed a consistent pattern of "Pains" and "Gains" associated with Indosat's Digital Telco services. Insights from each source complemented one another, offering a holistic perspective that encompassed strategic considerations (internal), customer experiences (external), and objective data (internal documents).

   Identified "Pains" such as network quality issues and delays in customer service responses were seen as barriers that could diminish the perceived "Gains," such as the ease of using the application.

2) Define Stage

   At the **Define** stage, triangulation is utilized to validate the Problem Statement by ensuring the accuracy of problem identification for Indosat's Digital Telco Services. The triangulation process, which incorporates data from internal interviews, external interviews, and internal document reviews, reveals a consistent alignment among the three sources in identifying the core issues. These sources converge on the same primary problem: the misalignment between business expectations and customer realities, along with the challenges surrounding the long-term sustainability of the service within MPWR apps.

3) Ideate Stage

   At the **Ideate** stage, triangulation was employed to validate the proposed ideas generated during brainstorming sessions with Indosat's internal teams for the development of new Digital Telco Services. The validation results from both sources—internal brainstorming and external interviews—demonstrate a clear and consistent alignment. This indicates that the proposed ideas are directly related to and valid in

addressing the identified needs for the enhancement of Indosat's new Digital Telco Services.

4) Prototype Stage

At the **Prototype** stage, the prototype was developed based on the ideas generated during brainstorming sessions with Indosat, and subsequently presented to a sample of five customers and one internal Indosat stakeholder. The validation results derived from two sources of information—Focus Group Discussions (FGD) with MPWR customers and interviews with Indosat representatives—can be regarded as interrelated and valid, as both sources provide a consistent perspective. The findings indicate that the application successfully addresses the majority of customer needs, particularly in terms of design and core features. However, there is a consensus that while the application has majorly improved, further refinements are necessary to better align it with the *user journey* and enhance overall user experience.

5) Testing Stage

At the **Testing** stage, a prototype was presented to be tested during a Focus Group Discussion (FGD) session with five MPWR customers. improvements were made to the prototype interface, introducing SIM card and eSIM Option feature, one dedicated page for customers to choose their preferred starter card type, independent of the machine learning recommendations. This enhancement also allowed users to check whether their device supports eSIM capabilities, thereby providing greater flexibility and transparency in the selection process.

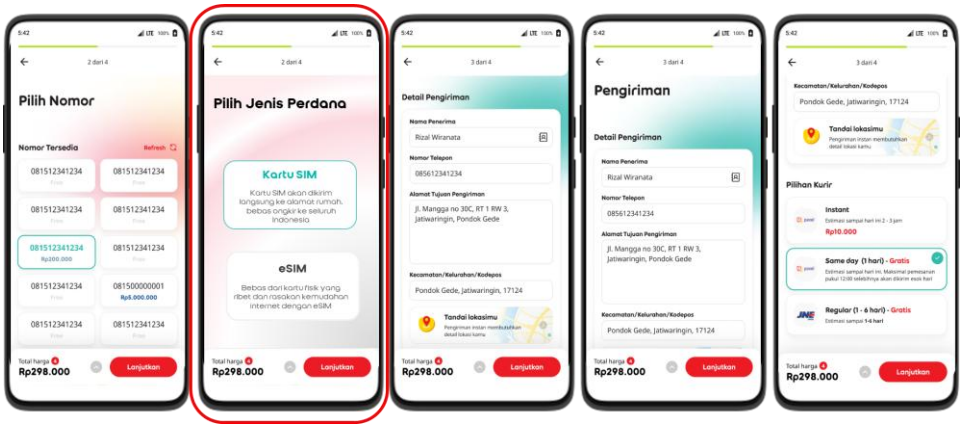

***Figure* 7 The Improved SIM and eSIM Option feature**

Source: Analysis by Author (2024)

The improvements made to the prototype were subsequently re-presented to the external parties, specifically the MPWR customers who had previously participated in the Focus Group Discussion (FGD). Feedback was gathered online through a Google Form, which included a questionnaire incorporating 10 System Usability Scale (SUS) statements designed to assess the usability of the revised Digital Telco Service

application. The questionnaire contained 6 positive statements and 4 negative statements, meaning the average SUS score of 84.5, this demonstrates that the prototype of the proposed Digital Telco Service application exhibits a high level of usability, suggesting a positive and satisfying user experience. According to the SUS score interpretation standard, a score above 68 is considered above average or indicative of good usability.

5. Conclusion

The study on the development of Indosat's Digital Telco service, using a Design Thinking approach (MPWR case study), identified key challenges such as unstable signal quality, slow customer service, and limited innovation in features, alongside internal constraints like infrastructure and offline promotion strategies. Despite these issues, the MPWR application was praised for its ease of use, showcasing its potential to meet dynamic customer needs. The iterative Design Thinking approach effectively focused on user needs and feedback, providing a pathway to improve Indosat's digital service competitiveness. myIM3 application enhancement, including SIM card and eSIM options, SIM card order tracking, diverse payment methods, and WhatsApp chatbot integration, were prioritized to improve usability and engagement. Testing yielded a SUS score of 84.5, demonstrating excellent usability and increased customer satisfaction. For future research the author recommends conducting live evaluations of application iterations to assess user adoption and engagement with features like eSIM options, order tracking, and personalized services in real-world settings.

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