CHAPTER II

LITERATURE REVIEW

2.1. Theory Review

This section describes the concepts and theories from diverse sources that are used to build and test new business models. Relevant literature includes, but is not limited to the following:

- Lean Startup
- Business Model Innovation
- Field Service Management Software
- Five Basic Performance Objectives

2.1.1. Lean Startup

The Lean Startup concept, developed by Eric Ries, is rooted in the desire to minimize risks and reduce waste in the development of new businesses (Ries, 2011). This approach emphasizes the rapid testing of business assumptions through the creation of prototypes that can be tested in the market. The common stages of Lean Startup involve creating a Minimum Viable Product (MVP), measuring market responses to the MVP, and continuous iteration based on the measured outcomes (Ries, 2011).

In contrast to traditional strategic planning, the Lean Startup approach is characterized by flexibility and adaptability (Blank, 2013). While traditional approaches involve detailed planning and strategy execution over a long period before a product or service is launched, Lean Startup emphasizes rapid testing and iterative changes based on direct market feedback. This approach is also more open to changes and adjustments in strategy based on continuous learning from the market (Blank, 2013)

A key aspect of the Lean Startup approach is the creation of hypotheses in nine predetermined aspects of the business concept using a concise visual representation known as a canvas (Osterwalder & Pigneur, 2010). This canvas provides a structured framework for entrepreneurs to visualize and design their business model. Additionally, ol engaging in external interactions to investigate each hypothesis through discussions with customers and stakeholders is crucial (Blank, 2013). The anticipated result of examining hypotheses is refining a business concept by validating the hypotheses.

The Lean Startup approach has been widely adopted in various industries, including technology, healthcare, and finance (Ries, 2011). Its popularity can be attributed to its ability to reduce uncertainty and risk in the startup process. By rapidly testing and iterating on business assumptions, entrepreneurs can quickly identify and address potential pitfalls, increasing their chances of success.

Also, the Lean Startup approach has been shown to foster a culture of innovation and experimentation within organizations (Tidd & Bessant, 2013). By encouraging experimentation and learning from failure, entrepreneurs can develop a competitive advantage in the market. Moreover, the approach's emphasis on customer feedback and iteration ensures that products and services are tailored to meet the needs of the target market.

2.1.2. Business Model Innovation

Innovation is strongly associated with growth. New business is created by new ideas(Joe Tidd & John Bessant, 2021). Innovation has always been instrumental in driving growth and competitiveness in business. In the past, an outstanding technological solution or the introduction of an exceptional product was sufficient for success(Oliver Grassman et al., 2014)

As per Grassman's framework, Business Model Innovation is a strategic process that involves redefining and restructuring the fundamental aspects of how a business creates, delivers, and captures value. Applied to a field service consulting

business specializing in rotating machines, this innovation may encompass novel approaches to service delivery, client engagement, and revenue generation. For instance, it might involve the introduction of predictive maintenance solutions, subscription-based service models, or the integration of advanced technologies to enhance diagnostic capabilities. The framework is provided in Figure 2.1 below.

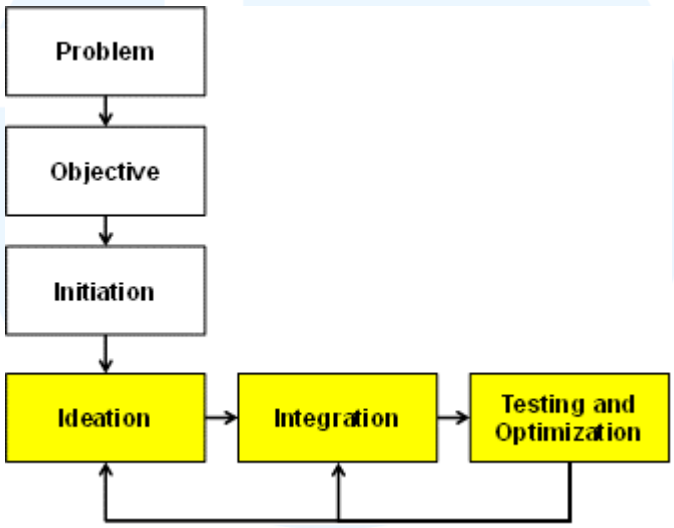

Figure 2. 1 Business Model Innovation Framework (Grassman et al, 2020)

2.1.3. Field Service Management Software

Field Service Management (FSM) software is a specialized solution designed to automate and streamline service-related activities by mobile or website. Unlike general systems such as Customer Relationship Management (CRM) or Enterprise Resource Planning (ERP), FSM software is uniquely tailored to the needs of service-oriented organizations, the illustration shown in Figure 2.2. It plays a pivotal role in efficiently managing equipment installations, repairs, and maintenance resources, often distributed across various business or customer sites. The significance of FSM lies in its ability to dispatch technicians, manage tools and spare parts, and oversee interactions between technicians and customers, ensuring optimal efficiency and quality in service operations (Druta, n.d.; Knezevic et al., 2012).

The importance of FSM is underscored by its multifaceted advantages. Firstly, FSM facilitates effective customer engagement management by keeping clients informed about the status of operations related to their equipment and providing timely notifications about additional work requirements or unpredicted situations. Secondly, it streamlines the coordination of service requests, manages tickets, and ensures that technicians' work statuses are up-to-date, including the resolution and increase of task. Besides, FSM software supports collaboration with partners or contractors, enabling companies to fulfill contractual obligations efficiently(pwc, 2020).

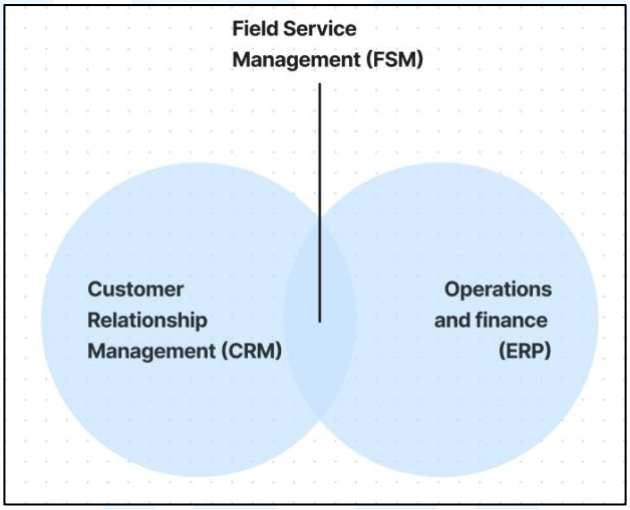

Figure 2. 2 Field Service Management(pwc, 2020)

2.1.4. Five Basic Performance Objectives

Five key performance indicators (KPIs) are crucial for assessing the overall operational efficiency of a business. These KPIs include quality, speed, dependability, flexibility, and cost-effectiveness (Ul Haq & Faizan, 2022). According to Investopedia, KPIs are quantifiable measurements used to gauge a company's overall long-term performance, specifically helping to determine a company's strategic, financial, and operational achievements(Alexandra Twin, 2024).

For a maintenance company, ensuring high-quality service is key to maintaining customer satisfaction and industry standards. Metrics such as customer satisfaction scores can reflect how well the maintenance services meet client expectations (Lenahan, 2006). In the maintenance sector, response time is critical for addressing client issues promptly and minimizing downtime. Service delivery time metrics indicate how quickly maintenance tasks are completed, contributing to client satisfaction and operational efficiency.

Maintenance motor generator companies rely on the dependability of their services or products to build trust with clients and maintain a competitive edge. Metrics such as uptime percentage and mean time between failures are crucial for assessing the reliability and predictability of service delivery Adapting to evolving customer needs and market dynamics is crucial. For a maintenance company, the capacity to promptly reconfigure schedules and assign resources based on prioritized tasks or urgent client demands is vital.

Efficient use of resources is crucial for maximizing profits and staying competitive. Metrics like unit cost and ROI are used to assess the effectiveness of resource allocation and process optimization. Field service management (FSM) software can help control costs by improving scheduling and routing, reducing travel time, and cutting fuel expenses for field service technicians (Gobinath, 2024).

2.2. Initiation Stage

The initiation phase plays a vital role in the development of a new business model, necessitating a comprehensive SWOT analysis as explained by Grassman et al. (2020). This strategic process involves a thorough examination of the external environment, which entails the identification of opportunities (O) and threats (T), coupled with an assessment of internal strengths (S) and weaknesses (W). In the context of a field service consultant embarking on a new business model, recognizing external factors such as technological trends, regulatory changes, and competitive pressures in the field service industry is of paramount importance.

Leveraging opportunities and proactively addressing potential threats become critical strategies for success in this dynamic and competitive landscape. Internally, identifying and capitalizing on strengths, such as having a skilled and versatile team of technicians, while addressing weaknesses like inefficiencies in existing processes, are pivotal considerations. This SWOT analysis serves as a strategic guide, ensuring that decisions align with industry dynamics and internal capabilities, particularly in the context of developing an application for field service management. By comprehensively evaluating the internal and external factors, the field service consultant can formulate a robust and effective business model that leverages opportunities, mitigates threats, and capitalizes on the organization's strengths while addressing its weaknesses.

2.2.1. Total Addressable Market

Based on Imarcgroup, The global engineering services outsourcing (ESO) market, valued at USD 1.3 trillion in 2021, anticipates a robust CAGR of 24.6% from 2022 to 2030. Increasing collaboration between Engineering Service Providers (ESP) and Original Equipment Manufacturers (OEM) drives this growth, reflecting a rising inclination towards engineering services outsourcing (ESO). This trend is fueled by global R&D developments, a growing demand for cutting-edge technologies, and the imperative to streamline product lifecycles and reduce costs. As the ESO market expands, it aligns with the growing preference for outsourcing services as a cost-cutting strategy.

Concurrently as shown in Figure 2.3, the Field Service Management (FSM) market is composed for significant growth, with its projected size increasing from USD 4.23 billion in 2023 to USD 8.94 billion by 2028, presenting a CAGR of 16.16%. The FSM industry faces pressure due to the COVID-19 pandemic, emphasizing the need for effective team leadership and safety compliance. Trust-building within organizations becomes critical, given the pre-pandemic U.S. average for organizational trust at 70%. FSM vendors respond with various pricing

strategies, including customer-centric models enabled by technological advancements and a shift towards Software-As-A-Service (SaaS) solutions.

Key players in the FSM market strategically focus on acquisitions to enhance capabilities and competitiveness. For instance, GPS Insight's acquisition of FieldAware expands its capabilities, while strategic partnerships, such as ServicePower and PwC Enterprise Advisory, aim to deliver joint FSM offerings to manufacturing organizations in Europe. The FSM industry experiences rapid global growth, with the Asia Pacific emerging as a key region. Countries like India, with increasing cloud adoption and AI investments, contribute significantly to the FSM market's expansion. The market's evolution includes a focus on service contract management, particularly relevant for businesses relying on third-party service providers. The adoption of cloud-integrated contract management solutions adds to the industry's dynamism, positioning FSM as a pivotal sector within service-oriented industries.

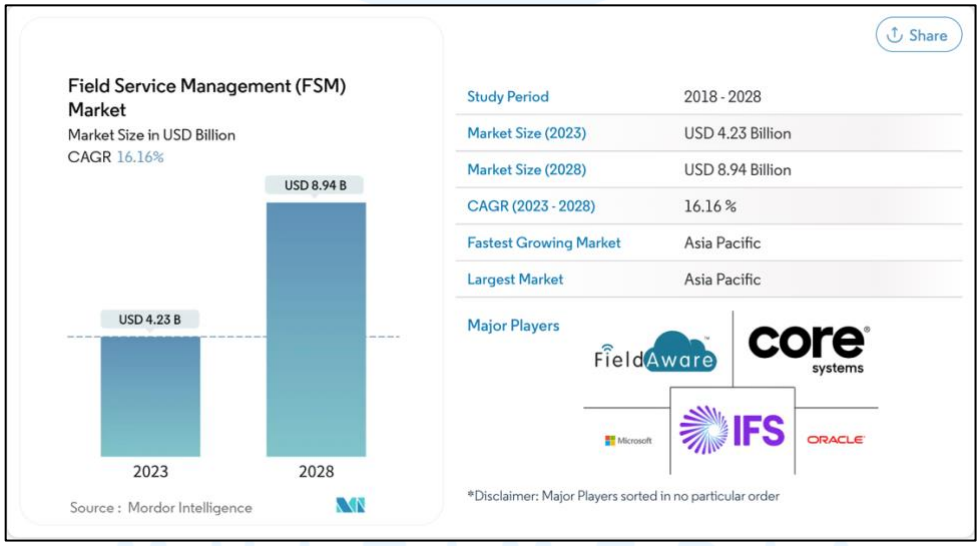

Figure 2. 3 Field Service Management Market (mordorintelligence.com)

2.2.2. General Environmental Analysis

This section aims to identify Opportunities and Threats at the macro level, encompassing political, economic, technological, and social aspects (PEST analysis) (Rastogi & Trivedi, 2016). Table 2.1 PEST Analysis

Table 2. 1 PEST Analysis

Factor	Aspect	Analysis
Political	Government Support and Policies	(+) Government initiatives supporting SME to go digital and this technology advancements can positively influence the FSM market
Economic	Budget constraints	(-) Budget constraint within client industries may affect their willingness to adopt new FSM solutions, emphasizing the need for cost-effective.
Social	Workforce Trends	(+) Understanding societal trends related to remote work, mobility and digital literacy is essential for tailoring FSM solutions to meet evolving workforce needs.
	Customer Expectations	(+) Meeting customer expectation for real-time communication, transparency, and efficient service delivery its critical fot the success of the FSM app

Factor	Aspect	Analysis
Technology	Advancements in technology	(+) Potential for enchanced service offerings through advanced technologies and improve efficiency of the project accomplishment. (-) Rapid technology changes may require continuous investments in software update and training human resources.

2.2.3. Industry Analysis

This section primarily aims to identify threats in the form of competitive pressures. The tool commonly used for this is the Five Forces Porter Analysis (Porter, 2008)like in the Figure 2.4.

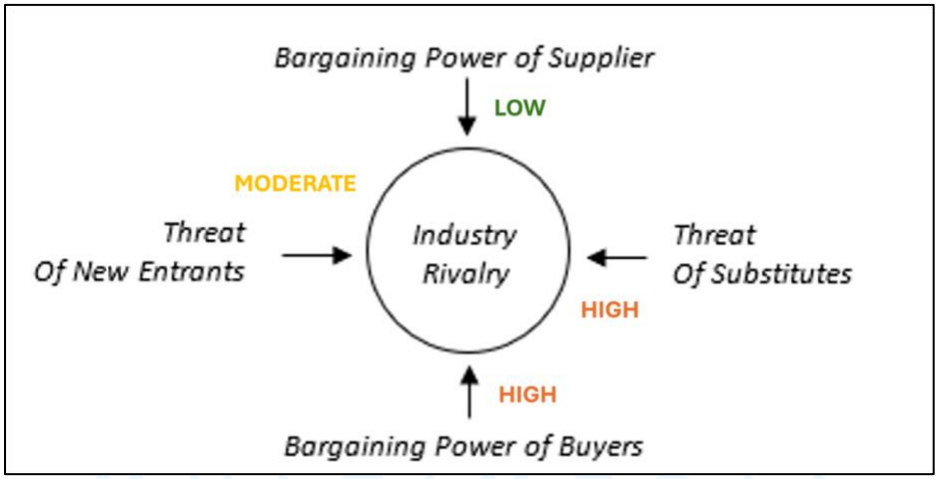

Figure 2. 4 Five Forces Porter

The threat of new entrants in the FSM application market is moderate. While the technical knowledge required to enter this industry is not excessively high, there are significant costs associated with development and marketing. Established

companies may also have strong relationships with customers, which can be hard for new entrants to overcome. However, the availability of cloud-based platforms and open-source software can lower the barriers to entry, making it easier for new players to enter the market.

Entering the market in the technical field of motors and generators and building a customer base is challenging. New entrants must show technical skill, reliability, and a customer-centric approach. Building this reputation takes time and effort. Prospective customers often prefer established providers, adding to the challenge. This issue requires strategic planning, careful execution, and a continuous focus on customer satisfaction.

The bargaining power of suppliers tends to be low in the FSM application market. Suppliers can be considered as developers, data storage services, or any third-party services integrated into the application. There are many similar services available, and switching costs are not high, which reduces the bargaining power of suppliers.

The bargaining power of buyers is high in the FSM application market. There are numerous FSM applications available in the market, giving buyers many options to choose from. Moreover, switching costs from one application to another are not excessively high, which further increases the bargaining power of buyers.

However, given the unique services rendered and the significant added value to TaskCard app, customers are less likely to consider switching to alternative software solutions. The combination of superior customer service, intuitive user interface, and tailored features creates a strong customer retention strategy, making this software a preferred choice for many businesses.

The threat of substitutes is high in the FSM application market. There are many different methods of managing field services, including various types of software, manual methods, or in-house developed tools, all of which can serve as substitutes to FSM applications. For example like Asana, Trello, Microsoft Project which can be used to organize and manage task for project management.

People prefer this FSM application for its trusted performance, dedicated support, and tailored business solutions. Its integrated technical knowledge enhances usability, making it comprehensive and hard to replace. Its prompt and reliable customer service distinguishes it from competitors.

The rivalry among existing competitors in the FSM application market is high. There are many players offering similar features and pricing, leading to intense competition. Additionally, the market is characterized by a high level of product differentiation, which can make it challenging for companies to differentiate themselves from their competitors. For example, major companies such as Salesforce, ServiceNow, Microsoft, and Oracle offer FSM applications with a wide range of features. However, small to medium enterprises might need to carefully consider subscribing to these software solutions due to their relatively high prices. Therefore, the Taskcard app, see opportunities an FSM application designed for maintenance companies in Indonesia,that developed based on user feedback to enhance field productivity.

2.2.4. Competitor Analysis

At this stage, PT. MGSI aims to identify Opportunities and Threats that may arise from direct competitors. Table 2.1 provides an example of a simple way to describe O and T when designing a financial technology business model (Alicia Raeburn, 2024). Another option to provide a summary of O and T is to combine it with S (Strength) and W (Weakness) in SWOT (Table 2.2).

Table 2. 2 Summarizes Opportunities and Threats

Environment	Key External Forces	Impact on	O/T
Social	Increasing demand for digital solutions in industrial services	Opportunity to expand market share and revenue	O
		Reduce the need of administration bureaucracy	O
Technology	Advancements in digital technology for monitoring and managing field service project	Potential to enhance operational efficiency and services	O
		Availability not 100%	T
Technology	Industry standardization for consistency	Opportunity to align with industry standards	O
Economy	Intense competition from companies providing similar services	Threat of intense competition and price decline	T
Industry	Introduction of industry specific compliance requirements	Potential challenge in meeting diverse compliance needs, necessitating adaptable software solutions	T

2.2.5. Internal Analysis

This section requires to identify strengths (S) and weaknesses (W)(Pickton & Wright, 1998). The S and W analysis results can be coupled with O and T to generate Table 2.2, which is shown below.

Table 2. 3 SWOT Analysis

Strength	**Weakness**
• Understanding societal trends related to remote work, mobility and digital literacy is essential for tailoring FSM solutions to meet evolving workforce needs. • Meeting customer expectation for real-time communication, transparency, and efficient service delivery its critical for the success of the FSM app	• Budget constraint within client industries may affect their willingness to adopt new FSM solutions, emphasizing the need for cost-effective. • Rapid technology changes may require continuous investments in software update and training human resources.

• Potential for enhanced service offerings through advanced technologies and improve efficiency of the project accomplishment. • Expand revenue.	
Opportunities	**Threats**
• Government initiatives supporting SME to go digital and this technology advancements can positively influence the FSM market • Potential to enhance operational efficiency and services. • Opportunity to align with industry standards	• Threat of intense competition and price decline • Potential challenge in meeting diverse compliance needs, necessitating adaptable software solutions

2.3. Business Model Design

Creating a business model involves two stages: ideation and integration (Osterwalder & Pigneur, 2010). Ideation is the generation and exploration of new ideas by diverse teams to solve problems or exploit opportunities. Integration structures these ideas into a feasible business model aligned with the business's strategy. Ideas may be refined or discarded based on their value. By the end of integration, a business model for revenue generation and growth should be established.

2.3.1. Ideation Stage

The goal of the project is to develop a specialized software solution designed for efficient data acquisition and confirmation in the field service domain. The primary objective is to streamline and enhance the accuracy of data analysis for reporting purposes. This software simplifies the process of information gathering during field service operations, providing a robust platform for project managers, company customers, and various stakeholders. The target audience encompasses project managers overseeing field service activities, the company's customers

relying on service updates, and stakeholders with vested interests in the project's outcomes. The chosen medium for achieving these objectives is advanced Field Service Management software, leveraging its capabilities to facilitate seamless data collection confirmation processes and ensure the delivery of precise and timely reports. This approach aligns with the overall goal of improving the efficiency and effectiveness of field service operations through advanced technological solutions. The diverse needs of workshop partners by providing them software subscription with personalized technical support and training. This dual approach ensures that MGSI's solution is adaptable, accommodating to its client's unique requirements and expertise levels in the motor and generator service industry.

2.3.2. Integration Stage

Integration involves transforming the conceptualization and ideation of a field service management application software into a comprehensive business model. By aligning with its environment, the business model must be designed to evoke a logical flow. Figure 2.5. show about the New Business Canvas Model.

MGSI's primary value proposition is its specialized design for motor and generator field service. The software stands out due to its comprehensive features that optimize these services. It targets customers including motor and generator manufacturers, internal maintenance teams, service providers, and workshop owners.

The value chain for MGSI's field service management software begins with a robust software development team dedicated to creating and maintaining cutting-edge solutions. Direct sales, online platforms, industrial events act as distribution points, ensuring accessibility for a broad customer base. The synergy between these elements creates a comprehensive value network, where software development, expert guidance, and accessible channels align to deliver a seamless and valuable experience for industries and workshop partners.

MGSI's profit mechanism is attached to a diversified revenue stream. Subscription fees for the field service management software contribute a steady income, allowing customers to access and benefit from regular updates and improvements. Additionally, MGSI introduces a training fee and subscription fee. This strategic pricing model enhances the overall customer experience and creates an additional revenue stream for MGSI. The direct sales and SaaS channels are key to ultimately fueling the company's profitability and sustained growth in the field service management market.

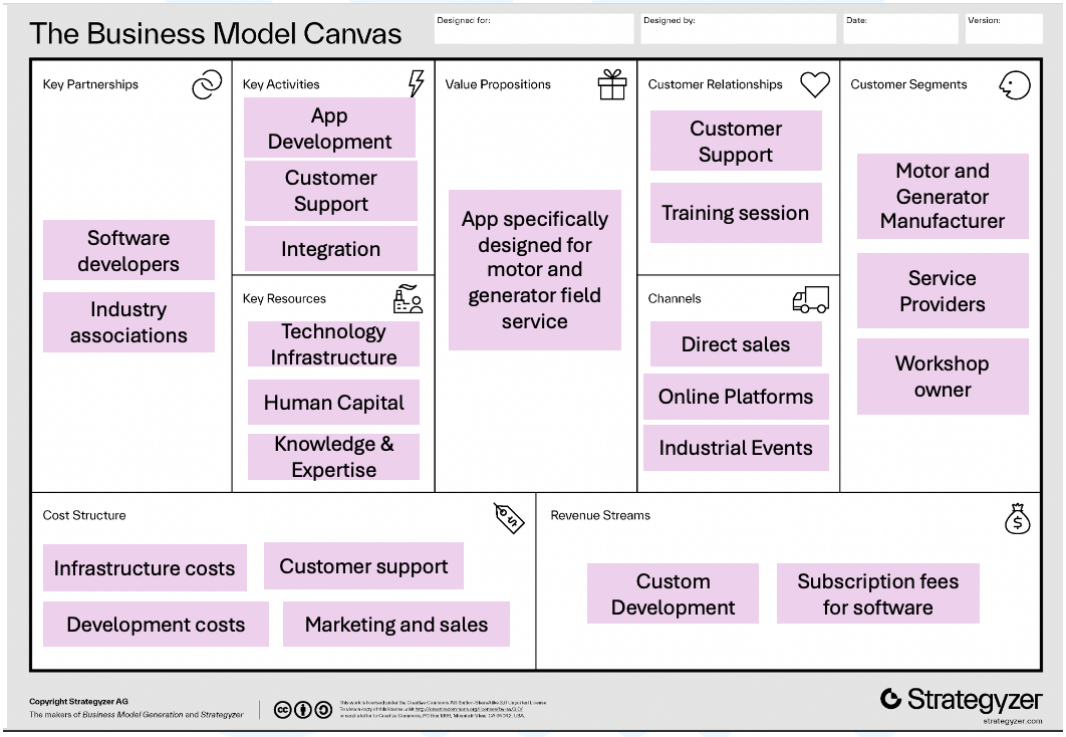

Figure 2. 5 New Business Model Canvas

2.4. Business Hypothesis

Business hypothesis is an assumption about the relationships or logic between components in a business model. Constructing hypotheses should be accompanied by arguments. A good hypothesis should specifically state which relationship will be tested. The following is a hypothesis on the Task Card Application.

The implementation of this Field Service Management (FSM) App solution holds the potential to transform the operational efficiency of technicians by providing a systematic approach to improve performance. With streamlined processes and real-time updates, technicians can significantly improve their workflows, reducing downtime and enhancing customer satisfaction. Moreover, with the communication and collaboration features makes the interaction with stakeholder easier to know the status of the project and identify the obstacle. By utilizing technology, it can elevate the quality-of-service delivery.

H1 : *We believe that Task Card can help team leaders and technicians in carrying out tasks systematically and enhance workflow*

Workshop partner technicians and project managers will be interested in this field service management software to improve their operational needs in the field. By recognizing the challenges faced by technicians in workshop environments, this application is precisely designed to address their pain points and streamline their workflow. The goal is to offer a tool with user-friendly interfaces and tailored features that provide a tool to improve the efficiency of task accomplishment. The application aligns closely with their preferences and requirements. This collaborative approach not only enhances the usability of the application but also encourages a sense of ownership and motivation among workshop technicians, making them more inclined to embrace and integrate this solution into their daily work routines.

H2 : *We believe that our workshop partner technicians want to use Task Card*

By selling the application, there is confidence in generating new revenue. A clear demand for a solution that aligns with the specific needs and challenges faced by the target customer has been identified. The pricing strategy is designed

to be competitive and flexible while ensuring that the solution not only meets the diverse demands of partners but also represents a cost-effective investment. The offered product enhances operational efficiency and aligns with industry needs. The solution's flexibility allows it to adapt to evolving industry trends. Furthermore, it provides valuable data insights, ensuring informed decision-making for enhanced business performance.

H3 : *We believe that we will generate revenue from selling the application to partner companies and industrial customers.*