Analysis of Central Maintenance Spin-off Creation Towards Digitalization that Focused on the Parent Company: Case of Integrated Steel Corporation (ISC) in Indonesia

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Abstract - *The steel industry is vital to national development, including Indonesia, despite not being a major global producer. America, Russia, and Japan now experienced a decline due to China's steel emergence. Integrated Steel Corporation (ISC) has also experienced declining performance; market capitalization dropped by 68.9% in the last eight years. The primary objective is to analyze customer preferences in the maintenance industry and determine positioning strategies. Another objective is to identify the factors driving the formation of the Strategic Maintenance Services (SMS) spin-off from ISC. Additionally, propose strategies for SMS to achieve competitive advantage. Data were collected qualitatively through interviews and forum group discussions (FGD) with customers to understand their perspective, SMS management to understand core business competencies, maintenance industry, current business strategy, and ISC management to understand the parenting strategy. The formation of the SMS spin-off was driven by ISC's internal dynamics: 1) the transformation of the parent company; 2) the incident of the main ISC factory that experienced a short circuit 3) maintenance support became a cost burden. External factors dynamic: 1) indications of rapid industrial growth; 2) the strengthening of the company as a group after experiencing losses for almost a decade. The proposed strategy for SMS involves leveraging ISC's competitive advantage for centralized service maintenance, initially targeting ISC subsidiaries and then entering Joint Venture companies. SMS aims to offer customized one-stop maintenance solutions with quality at competitive prices by enabling Digital Maintenance Information (DMI), targeting large industries in steel manufacturing, petrochemicals, flour mills, cement, and logistics.*

Keywords: *Firm Strategy, Maintenance Services, Spin-off, Diversification, Digitalization.*

I. INTRODUCTION

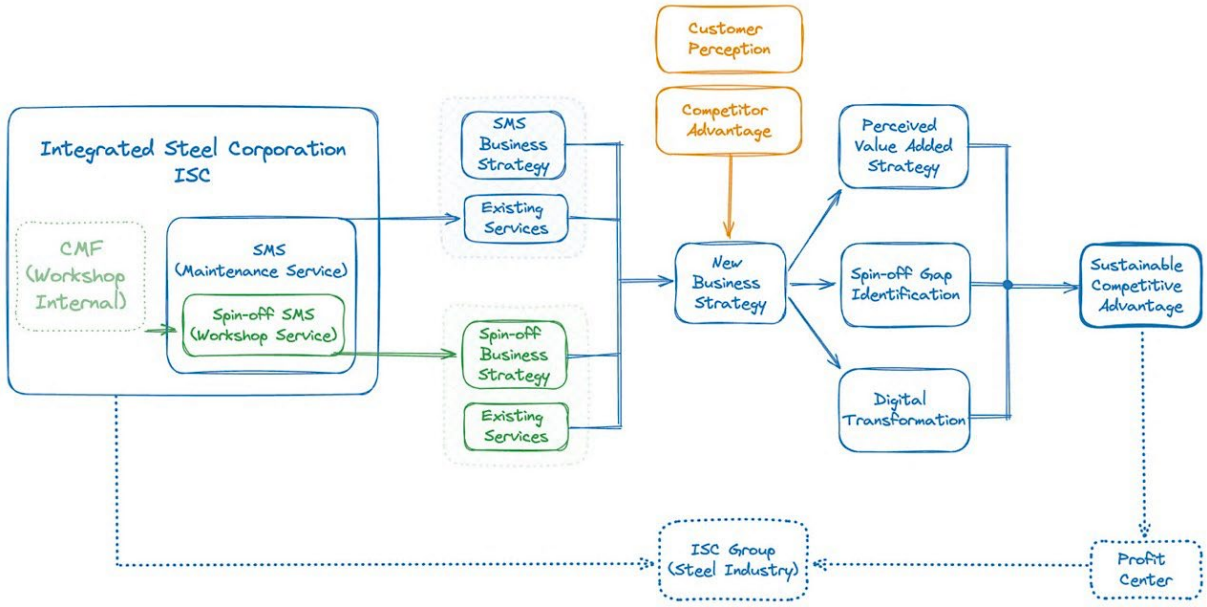
According to Espinoza-Parada et al. (2020), the steel industry plays a crucial role in the development of every national development, even in Indonesia, which is not the largest producer in the world. IISIA (Indonesian Iron & Steel Industry Association) (2023) addresses the steel industry as 'the mother of all industries' because steel is the basic material and supporting material for almost all industries. Steel serves as a fundamental material for a wide range of products, from infrastructure, automotive, shipbuilding, etc. (Japan Ministry of Economy, Trade, and Industry, 2021). Mercier et al (2023) reported on the Organization for Economic Co-operation and Development (OECD) Q4 for 2023 reports that global steel demand remains high, driven by ongoing industrial and urban development. The demand is filled by China as it has emerged as the largest player in the steel industry, with its production capacity and market influence continuing to grow (Sun et al., 2020). The phenomenon in other countries such as America, Russia, and Japan as the leader in steel producers 50 years ago experienced a decline starting at the beginning of the 21st century. This means China steel is getting bigger and bigger and crushing the market, and

really hitting other countries indeed countries that are not dominant in the steel market. Steel decline wasn't about trade; it was about technology.

Gajdzik & Sroka (2021) stated that steel industry is a highly energy-intensive sector. A lot of steel industry is already shifting from Electric Arc Furnace (EAF) to Blast Furnace which is to invest in new steel making technologies prohibitively expensive and requires very huge capital investment. This journal discusses the Integrated Steel Corporation in Indonesia, which experienced declining performance since 2012. At that time, it was investing in Blast Furnace Complex to enhance its production capabilities and fill technology gaps, but it corrupted and finally failed to operate. Market capitalization dropped in the last 8 years by 68.9% from 18,930 billion rupiah to 5,881 billion rupiah. The declining performance can also be assessed from the market share, which has decreased since 2010 and even had to stop one of its products, wire rods, which has a high level of competition from domestic and international.

Looking at macroeconomic dynamics, in 2019 Indonesia as a country created anti-dumping regulations to protect the steel business industry so that domestic enterprises still can exist and be competitive. In the same year, the parent company of the Integrated Steel Corporation (Company Code: ISC) made a report that the organizational and business restructuring, which the organization was downsized due to its heritage as a labor-intensive steel company that is already behind Japan and Korea, which was anticipated 20 years ago. During its four-year transformation from 2019 to 2023, ISC reported in its annual report to have reduced its employees by 35% from 3479 employees to 2254 employees, which even more by the last 10 years has been reduced by 70% from the number of 7490 employees. Streamlining this organization can occur by carrying out various efforts, such as early retirement programs, until factories that require high operational costs are abandoned.

The transformation agenda is the factory efficiency program, which is not optimal; of the total 7 factories owned, 5 factories were declared no longer operating, leaving 2 main factories, Hot Rolled Coil and Cold Rolled Coil. These dynamics and decision-making improve the company's annual report showing an increase in performance that can be maintained. Unfortunately, when the momentum for transformation occurred, a short circuit occurred at ISC main factory. This disaster caused a fire incident and impacted ISC's operational and financial condition due to the needed time to carry out revitalization and reactivation. In conditions like this, supporting facilities will become a financial burden. In the same year, their central maintenance facilities became a strategic business unit in one of the subsidiaries operating in the maintenance services sector (Company Code: SMS).



Source: Writer Analysis inspired by Rothaermel (2012)
Figure 1. SMS Spin-off Strategy

Lailla & Mardi (2022) stated that organizational change is related to changes in strategy, culture, employee attitudes, organizational structure, technology, communication leadership, and employee development that influence employee performance. SMS must be prepared to become a maintenance service business that is looking for an external market. If this organizational change is not properly managed by the management of ISC and the SMS itself, it can cause a decline in the quality of employee service delivery to customers (Archibong & Ibrahim, 2021). Apart from profitability and organization, the thing to consider from internal ISC users is how if their factory is operating again, SMS can provide the same service to ensure the maintenance activity remains smooth in ISC due to their need to carry out productions.

This Spin-off strategy was inspired by Rothaermel's theory on how competitive advantage can be achieved by analyzing industry and firm effects; these two factors are interdependent, as Figure 1 underscored by a two-pointed arrow connecting them (Rothaermel, 2012). In formulating a business strategy, it is necessary first to analyze the external environment and then internal organization factors, which refers to the understanding that the success or failure of a business is influenced by factors originating from outside the company's control to gain an understanding of potential opportunities and threats that may have an impact on organizational performance. Then, analyze the organization's internal factors, which refer to the company's strengths, weaknesses, resources, capabilities, core competencies, and how digital transformation in the maintenance business flow can help leverage the added value and sustainable business model offered to customers (Gregori & Holzmann, 2020). These internal elements shape an organization's ability to respond effectively to external and market opportunities and threats. Foster & Grannell (2022) said that strategy becomes about knowing where the business is going (vision) and choosing which path (strategic choices) will get a company there. Without strategic goals or ambitions for the organization, every possible choice and decision is valid, but progress will be difficult, if not impossible.

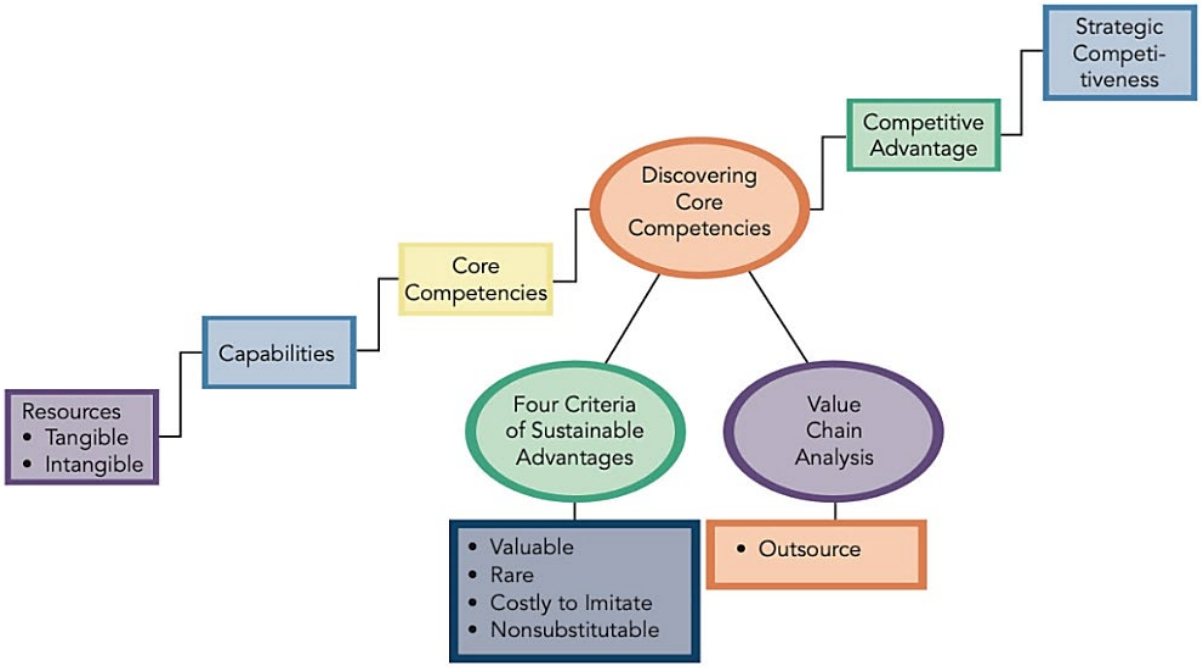
The main objective of this research is to analyze customer preferences in the maintenance industry and determine service positioning strategies and customer target criteria. The second objective is to identify and analyze the determining factors and dynamics driving the formation of the SMS spin-off from ISC. Additionally, to propose actionable steps for SMS to develop and implement effective business strategies that align with market opportunities to achieve competitive advantage. To achieve this goal, this research has carefully collected qualitative data, including interviews, group discussions, and company reports, to understand the dynamics of the steel industry in Indonesia that forced Integrated Steel Corporation (ISC) to diversify its business through spin-offs and provide strategy recommendations for the success of Subsidiary Maintenance Services (SMS).

Porter's Five Forces Model could enable firm leaders to not only understand the industry environment but also to shape firm strategy (Porter, 2008). It has a rule of thumb, the stronger the five forces, the lower the industry's profit potential, making the industry less attractive for competitors. The reverse is also true: the weaker the five forces, the greater the industry's profit potential, making the industry more attractive. Industry effects are the result of the underlying economic structure of the industry and its impact on firm performance. Firm effects attribute firm performance directly to strategic leaders' actions. In the case of SMS entering the maintenance industry, Porter's Five Forces analysis will help identify the strength of the competitive forces in a particular sector, such as the bargaining power of suppliers in the maintenance industry regarding the number of suppliers, material availability, and even analyzing the competition in the supplier industry itself. Conditions of buyers' bargaining power regarding their preferences in choosing services, switching costs, and purchasing power of customers. Competitor analysis is also an important component that must identify the possibility of the emergence of new competitors

by analyzing the barriers for new companies entering the maintenance services industry, possible substitutions for the services we offer at cheaper prices or better quality, which can also be influenced, and lastly the competition with competitors in the industry is currently occurring.

Porter (2008) found that several classifications of competitors make it easier to identify from groups of companies that are not in this industry but can overcome entry barriers at very low costs, companies that have real synergies with their presence in this industry, companies that compete in this industry are an extension reality of the company's strategy, and customers or suppliers who may integrate backward or forwards. There are two dimensions in conducting analysis using Porter's Four Corner Analysis, on the one hand needed to predict what drives competitors, on the other hand needed to identify the capabilities of competitors in this industry. From both sides, companies can analyze competitors' strategies in the context of their positioning, their future strategies, what competitors value, and what will trigger retaliation from competitors. The first step in competitor analysis is identifying the competitor's goals and assessing how those goals are being achieved. Then, the SMS can predict whether each competitor is satisfied with its current position which helps determine the likelihood that each competitor will change its approach and tactics in response to outside events. The next step is to determine the assumptions made by competitors regarding the growth of the consulting services industry as well as the company itself. By reviewing these assumptions, the SMS will be able to predict the actions and responses of competing companies to developments that occur. Establishing a statement regarding each competitor's current strategy is the third step in the competitor analysis process. The best way to conceptualize competitor strategy is as the primary basis of operations in each business function and the way competitors try to integrate those functions.

Hitt et al. (2016) grouped resources into two categories, tangible as a company's borrowing capacity and the status of its visible physical facilities. Examples of tangible resources in SMS include items such as buildings, machinery, equipment, inventory, and land. Tangible resources are usually easier to measure and value because they have a clear physical existence. They often contribute directly to a company's production processes or operations and can be bought, sold, or used as collateral for financing. Although production assets are tangible, many of the processes required to use them are intangible. Intangible resources are a source of superior capabilities and subsequently, core competencies. It is assets that have no physical existence but still have value to the company. Although intangible resources are not physical, they are often critical to a company's success, influencing competitive advantage, market position, and long-term sustainability.



Source: Hitt et al., (2016)

Figure 2. Internal Analysis to Lead Strategic Competitiveness

In analyzing the company's internal organization, the company's entire portfolio of resources and capabilities must be deepened. This analytical perspective shows that each company has resources and capabilities that other companies do not have. Some core competencies can produce competitive advantages for the company. Understanding how to leverage a company's unique resources and capabilities is a key outcome that decision-makers look for when analyzing an organization's internals. Figure 2 on the next page, popularized by Hitt et al. (2016), illustrates the relationship between resources, capabilities, core competencies, and competitive advantage and how all of this can produce strategic competitiveness in organizations to create value for customers. The analysis of discovering core competencies can be assisted by the VRIO framework (Value, Rare, Costly to Imitate, Organizational).

Valuable, Rare, costly to Imitate, and the firm must be Organized to capture the value of the resource is the main idea of the VRIO Framework. This has a positive effect on a firm's competitive advantage. In particular, a valuable resource enables a firm to increase its economic value creation. A resource is rare if only one or a few firms possess it. If the resource is common, it will result in perfect competition where no firm is able to maintain a competitive advantage. The firm must be organized to capture value, it must have in place an effective organizational structure and coordinating systems to achieve sustainable competitive advantage (Rothaermel, 2012). After identifying the various resources, capabilities, or competencies of the SMS, this research uses an analysis method based on Table 1 to assess whether the resources, capabilities, or competencies of the SMS have a level of competitive implication disadvantage, parity, temporary, unused, or have reached a position of sustained competitive advantage. From the results of the VRIO framework analysis, researchers will get information on which competency gaps from SMS are good and can be developed to achieve a competitive advantage.

Researchers chose the VRIO framework analysis as a strategic tool to assess and enhance their competitive advantage because this framework enables businesses to systematically evaluate their internal resources and capabilities by maximizing their potential to create value, the rare resources in the market, how to be difficult to imitation by competitors, and the effectiveness of the organization in

leveraging these resources. The thing that is most emphasized by VRIO in industrial maintenance is how to analyze, process, and execute work because each equipment will always be different.

Table 1. VRIO Table Analysis

Resources are…				Impact
Valuable?	**Rare?**	**Difficult to Imitate?**	**Organization?**	**Competitive Implication**
No	-	-	-	Competitive Disadvantage
Yes	No	-	-	Competitive Parity
Yes	Yes	No	-	Temporary Competitive Advantage
Yes	Yes	Yes	No	Unused Competitive Advantage
Yes	Yes	Yes	Yes	Sustained Competitive Advantage

"Spin-off" is the process in which a company separates one or more parts of its business into a separate, independent entity. According to Maldaner & Fiorin (2018) on the Spin-off Creation Process framework they popularized, researchers applied to this case study and the results show that spin-off creation is an alternative for exploring stagnant resources in the parent company in order to obtain market opportunities. Separating spin-offs and integrating them into the innovation environment is a strategy to reduce market barriers. Although factors such as public policy have limited influence on decision-making, they influence the spin-off formation process.

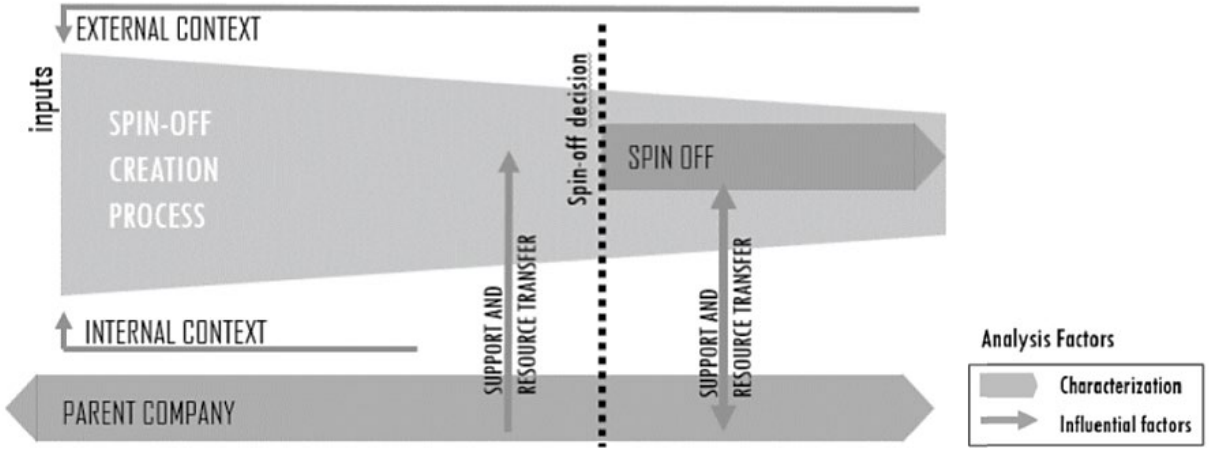
Table 2. Categories, Analysis Factors, Related Case for Spin-off Creation Framework

Categories		Analysis Factors	Related Objective
Characterization	Parent Company	Business aspects: Business Sector; Core Business; Portfolio. Entrepreneurship and innovation: R&D Process; External actors; Culture conducive to the creation and sharing of ideas; Resource sharing policy; Spin-off policy in the parent company	To characterize the organizational context of the parent company and spin-off.
	Spin-off	Business aspects: Business Sector; Core Business; Portfolio. Type of spin-off: Regarding motivation and support from parent company	
Influential Factors	Internal Environment	Relationship and support: Relationship Network (ability to establish alliances); HR and infrastructure; financial support or access to credit and investments; operational freedom. Resource transfer: Technology, Intellectual, and Human Capital	- To identify the motivation that guides the investment decision on a corporate spin-off - To identify resources involved, share and transferred from the parent company in the spin-off creation process
	External Environment	Public policy; Market dynamics; Industry Maturity	- To identify the motivation that guides the investment decision on a corporate spin-off - To describe the process of spin-off creating regarding the development environments for innovation entrepreneurship.

(Source: Maldaner & Fiorin, 2018)

Table 2 explains the spin-off process has many aspects of careful planning, execution, and post-spin-off management. The spin-off framework in Figure 3 pupularized by Maldaner and Fiorin will help investigate the driving factors behind a ISC decision to initiate a corporate spin-off. Through a rigorous analytical framework, this research explores three important dimensions. First, it requires a comprehensive analysis of the structure of the parent company and the specific segments allocated to the spin-off. Second, the relevant factors influencing the separation decision include a wide range of considerations. Third, the spin-off process involves navigating the internal and external environment. Internally,

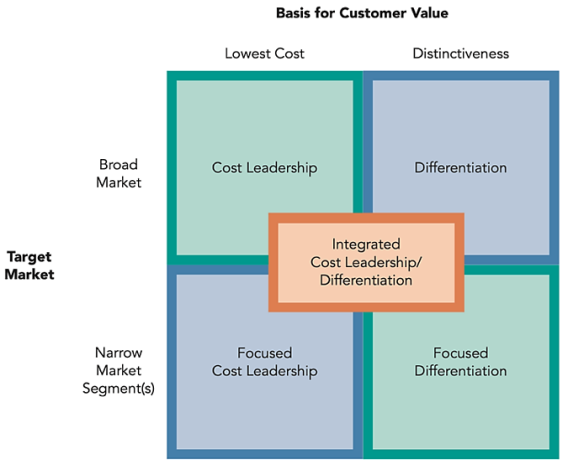
this includes restructuring organizational hierarchies, reallocating resources, and managing human resource transitions. Externally, legal and regulatory compliance, communication with stakeholders, and market positioning are the most important.



(Source: Maldaner & Fiorin, 2018)
Figure 3. Spin-off Creation Framework

Each step requires careful attention to detail, collaboration between departments, and alignment with overarching strategic goals. Additionally, the success of the SMS spin-off depends on effective communication and transparency with stakeholders, thereby ensuring buy-in and support throughout the transition process. The SMS spin-off process represents a strategic maneuver undertaken by ISC as the parent company to unlock value, increase focus, and take advantage of emerging opportunities. As emerging economies continue to expand, the strategic need for spin-offs is ready to play a critical role in shaping the future trajectory of traditional industries, driving innovation and driving sustainable growth.

Porter found that firms must choose between five business-level strategies based on Porter's Generic Strategy in Figure 4 to establish and maintain their desired strategic position to competitors: cost leadership, differentiation, focused cost leadership, focused differentiation, and integrated cost leadership/integrated differentiation (Porter, 2008). When selecting a business-level strategy, firms evaluate two types of customer value, lower cost than rivals or the ability to differentiate and command a premium price that exceeds the extra cost, and another two types of target markets are broad market and narrow market segment. Of the five quadrant business-level strategies, none is better than the other, but firms often are "caught in the middle" because they do not differentiate effectively or provide the lowest-cost goods, especially when they pursue integrated cost leadership/integrated differentiation.



(Source: Porter, 1980)
Figure 4. Porter's Generic Strategy

II. METHODS

Research data were collected by qualitative methods using interviews and forum group discussions (FGD) to conduct several respondents from customers to understand their perspective, management of SMS to understand the core business competencies, overall maintenance industry, and the current business strategy, and management of ISC to understand the parenting strategy of this spin-off. The interview and FGD approach with the list of respondents in Table 3 in this research were

standardized questions based on each objective with semi-structured questions and open-ended questions. Because this research type is a case study from real business units, Creswell & Creswell (2018) said that phenomenology involves a range of 3–10 sampling with each objective being represented by 2 samplings to achieve consistency and credible results.

Table 3. List of Interview and FGD

Position	Objectives
President Director of SMS	- Maintenance Service Industry - SBU Business Strategy
Head of SMS Spin-off	- SBU Business Strategy - SBU Marketing Strategy
Head of Commercial SMS Spin-off	- SBU Marketing Strategy - Market Analysis
Eng. Maintenance Planning SAL (ISC Joint Venture)	- Customer Perception - Competitor Analysis
Eng. Maintenance Planning HRC (Holding ISC)	
Sr. Specialist Subsidiary & Affiliates Business Management ISC	- ISC Business Strategy for SMS
Sr. Eng. Mechanical Engineering SMS Spin-off	- Internal Capabilities - Value Chain Analysis
Head of Workshop SMS Spin-off	

Data from interviews and FGDs will be coded and absorb the main ideas from each person. The main idea is used as primary data, which is added to secondary data obtained from books, journals, and articles. Table 4 shows how the method how data analyzed, external factors will be processed using Porter's Five Forces (Porter, 2008), competitor analysis will be analyzed using Porter's Four Corner analysis (Porter, 1980), Internal analysis by identifying tangible and intangible resources (Hitt et al., 2016) up to VRIO (Rothaermel, 2012), and carrying out business strategy formulation by first identifying the Spin-off Creation Process (Maldaner & Fiorin, 2018) and finally recommending strategy positioning by Porter's Generic Strategy (Porter, 1980).

As researchers anticipate the results of semi-structured interviews, it is important to check the validity, reliability, and generality of the data. Ensure clarity and relevance of questions, consistency of responses, and stability of interview instruments. Clear coding and interpretation criteria increase reliability. Combining the interview results with current literature will validate the findings and ensure significant contributions to the field. Retesting, triangulation with surveys or observations, and using software for data coding and theme identification provide additional evidence for the findings.

Table 4. Data Analysis Method

External and Competitor Analysis	Internal Core Competencies	Business Strategy
How to retrieve data		
Interview with customers, head of commercial, and source from articles, journals, and other literature	Interview and FGD with management and operational team of SMS	Interview with management of SMS, analysis results of external and internal findings. Additional sources from articles, journals, and other literature
How the data analyzed		
Porter's Five Forces Porter's Four Corner Analysis	VRIO Framework Value Chain Analysis	Spin-off Creation Process Porter's Generic Strategy

III. RESULTS AND DISCUSSION

Figure 5 explains the results of external analysis using Porter's Five Forces Model, which allows SMS to understand the industrial environment and form a company strategy. This strategic insight is very valuable for identifying and exploiting the existing business competitive conditions. The first Supplier's Bargaining Power is the supplier's products and/or services are limited (High). Khurshid et al., (2023) suggested the conditions of the Russian-Ukrainian war that have occurred since 2022 have affected the availability and prices of several important raw materials. Second, the supplier's services are differentiated, and there are no good substitutes (High). All suppliers of materials and labor required in the industry have different specifications and also have their own special skills. The next factor is when the industry members wish to change suppliers. Nguyen et al. (2020) suggest this will increase the overhead costs of services offered to end users, so industry members incur high costs to shift purchases to other suppliers (High). The fourth is the supplier industry, which is more concentrated and dominated by several large companies (Medium). According to SMS management, suppliers in the industrial maintenance sector are limited, especially suppliers of special materials and special skilled labor. Finally, industry members do not have the potential to carry out backward integration to carry out their own production (High). Industry members will need very large investments to enter the raw materials market (Shulepov et al., 2021), and if they want to enter the labor supply market, they will have to take into account salary overhead costs.

Then, for the first Buyer's Bargaining Power, the service or industrial product is not standardized or differentiated (Low). In the maintenance services industry, it is very rare to find the same work because the damage and maintenance needs are different which influences the cost aspect of each problem solving (Meissner et al., 2021). Then, the buyer's costs for switching to a competitor's service are relatively high (Medium). Buyers are free to change maintenance services as they will most likely open tenders. The maintenance industry is quite difficult to contract because the level of differentiation is high. Next, the number of buyers is large compared to the number of industry sellers (Low). There are many industries and the scale of the companies is very large compared to the maintenance industry. Fourth, Buyers pose a real threat to backward integration into the seller's business (High). Buyers usually have their own small workshops to do their jobs. This type of buyer often requires other supporting factors such as delivery time, after-sales service, and accessibility. Then, buyers have almost no information about the seller's quality, price, and costs (Low). Information regarding a seller's quality, price, and costs is very difficult for buyers to predict and requires requesting quotations and analysis to resolve issues. Sixth, Buyers do not have the ability to postpone purchases and rarely delay maintenance requests due to the need for reliable equipment to keep the plant running smoothly (Low).

Next, there is the Threat of New Entrants. The first is that there is a significant cost advantage or experience-based learning curve (Low). Maintenance service industry needs experience-based advantages to strengthen the dominance of established players. Next, Dam & Dam (2021) stated that the service industry customers have a strong brand preference and/or loyalty to the seller and relative network effects (Low). The presence of many workshops also further clarifies the competitive landscape of the maintenance services industry. Established players have strong relationships with industry clients, brand recognition, and economies of scale, which give them a competitive advantage over new entrants. Next, there are no specific capital requirements, government policy, trade policy, and low intellectual protection, although large companies with comprehensive health and safety requirements will strongly consider the need for certification (Medium).

Replacement Products, consisting of the first Good Substitutes, are available easily and at attractive prices (High). China manufacturers offer cost-effective alternative equipment, potentially appealing to end users to reduce maintenance costs. These replacements can range from engines and components to entire systems. Both replacements feature comparable or better performance (Medium). The availability of replacement products from China may reduce demand for maintenance services, especially for obsolete equipment. Industrial

clients may be interested in more cost-effective alternatives rather than investing in expensive maintenance and repairs. Furthermore, buyers have low costs when switching to substitute products (High). Those on a budget may be attracted to the lower initial costs of purchasing new equipment versus investing in existing machine maintenance services.

For the Strength of Rivalry, the buyer demand grows quickly as Badan Pusat Statistik (2023) reported that many industries have emerged in the last 10 years (Low). Then, the buyer's costs for switching brands are low due to low customer switching costs, and SMS may need to operate on smaller margins initially to be competitive and successful in market penetration (High). Third, the services of members of this industry are highly differentiated (Low). There is a need to focus on value differentiation, not just based on price, such as specialized expertise, reliability, customer service, and innovative solutions. SMS can still attract customers who prioritize quality and reliability over low-cost alternatives by offering SMS value beyond price. Fourth, companies in this industry have relatively high fixed costs (Medium). There is a need to invest in advanced technologies, implement efficient processes, expand service portfolios, and enhance customer experience to attract and retain customers and strengthen their competitive position in the market. SMS can also rely on its in-depth experience because not everyone can do it easily if they don't have experience. Lastly, there are not many competitors of the same size. With so many choices available to customers, so it is necessary to build and maintain customer loyalty for the sustainability of the maintenance services industry in order to grow loyalty and leverage the customer profitability level (Almohaimmeed, 2019). Offering personalized service, proactive maintenance solutions, and responsive support can help service providers retain customers (Medium).

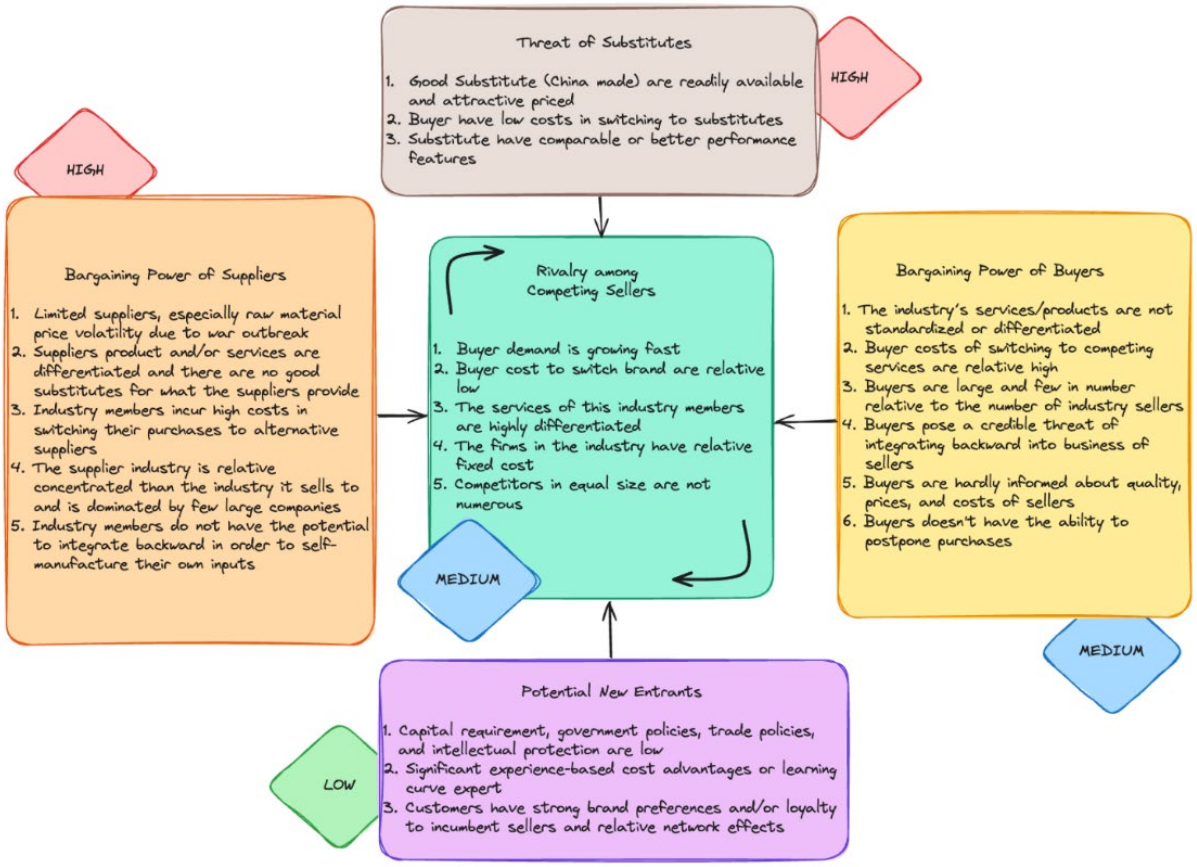


Figure 5. Porter's Five Forces of Maintenance Industry

Internal Analysis with SMS brings several inherited resources as capital provided by ISC. The results of interviews from the management and operational teams can be

grouped as Table 5 arranged into tangible resources as physical assets that can be seen and counted and intangible resources as assets that are rooted deeply in the firm's.

Table 5. Tangible & Intangible Resources

Tangible Resources	
Organizational Resources	• Join with subsidiary SMS instead of as a new company
Physical Resources	• 1000 m2 Assembling Location • 6 Workshop located the middle of Industrial Estate
Technological Resources	• CNC machine • Variety of Conventional Lathe, Milling, Boring, etc. • Gear Making Tools • Variety of Welding Tools • Motor Rewinding & Oven
Intangible Resources	
Human Resources	• SMS existing has expertise in projects and supply manpower gets additional company value from SMS spin-off which has expertise in the workshop, calibration, inspection, and troubleshooting. • Level 2 automation skills and calibration that can provide KAN certification
Innovation Resources	• Strong troubleshooting experience with engineering software as tool solutions • Initial stages of Digital Maintenance Information (DMI) to improve workflow, streamline operational activities, and provide customers with access to maintenance status information
Reputational Resources	• Experienced in working on equipment brands from all over the world because ISC used a variety of equipment from the USA, Germany, France, Other Europe and even Asia

If combined, this analysis of tangible and intangible resources will become the capabilities that SMS possesses as capital for its competitive advantage in the maintenance service industry. Ferreira et al., (2020) explained that capability is one way to identify whether the resources owned constitute a competitive advantage. Therefore, from interview reference data and competitor analysis, the researcher grouped the important capabilities that a maintenance service company must have, then carried out a gap analysis of the current industry conditions. Capabilities are often developed in specific functional areas (such as manufacturing, research and development, and marketing) or in parts of functional areas (e.g. advertising).

Hitt et al. (2016) said that some essential capability areas that can be adopted are marketing ability to penetrate customers with promotion and brand name, having maintenance information that is integrated and easily accessed by customers, employees, and supervisory management, employee skills that match high experience-based costs, organizations that mutually motivate, empower, and retain, high accessibility and effective logistics. Apart from that, results from analyzing based on tangible & intangible SMS resources and competitor analysis show that the maintenance service industry has five essential things to have, diverse suppliers and the ability to get the best prices, a wide range of manufacturing machines, wide range of field service assurance skills/Plant Support, Certified employee skills to meet job standards, and as an one-stop maintenance service that is integrated which provides convenience to customers in

servicing equipment. According to Frei (2008) in the Harvard Business Review regarding "The Four Things a Service Business Must Get Right" which must have four approaches for crafting a profitable service business: the design of the offering, the funding mechanism, employee management, and customer management. These findings can identify the competencies gap and develop to achieve a competitive advantage.

From a series of identification regarding resources, capabilities, to core competencies then explore the competitive advantage by analysis in Table 6 regarding VRIO Framework Analysis of SMS taken from the internal analysis produces two capabilities that are sustainable competitive advantage, marketing ability to penetrate customers due to having the privilege of being a subsidiary of ISC group and approaching the ISC Group directors for effective promotion and then being able to target workshop contracts. Another capability is the high experience-based cost of SMS employees who have intangible resources in the form of knowledge, skills, and capacity to innovate, inherited from their experience maintaining the ISC factory, which is very difficult for competitors to imitate.

Table 6. VRIO Framework Analysis of SMS

Capabilities	Valuable	Rare	Costly to Imitate	Organized to Capture Value	Impact
Marketing ability to penetrate customer	YES	YES	YES	YES	Sustainable Competitive Advantage
Integrated maintenance information	YES	YES	YES	NO	Unused Competitive Advantage
Strong financial and funding mechanism	NO				Competitive Disdvantage
Diverse suppliers and ability to get the best prices	NO				Competitive Disdvantage
Wide range of manufacturing machines	YES	YES	NO		Temporary Competitive Advantage
Wide range of field service assurance skill/Plant Support	YES	YES	NO		Temporary Competitive Advantage
Certified employee skills to meet job standards	YES	NO			Competitive Parity
Employee skills that match high experience-based cost	YES	YES	YES	YES	Sustainable Competitive Advantage

Capabilities	Valuable	Rare	Costly to Imitate	Organized to Capture Value	Impact
Organizations that mutually motivate, empower, and retaining	NO				Competitive Disdvantage
High accessibility and effective logistics	NO				Competitive Disdvantage
Customer relationship management	NO				Competitive Disdvantage
As an one stop maintenance service that is integrated	YES	YES	YES	NO	Unused Competitive Advantage

There are two factors that can become a competitive advantage for SMS, the development of Digital Maintenance Information (DMI), which has not yet been completed. These are rare characteristics in maintenance that competitors are costly to imitate. Maintenance monitoring using digital information offers two main benefits, significantly increasing operational efficiency and reducing costs. First, this digitalization system can simplify maintenance workflows by integrating various maintenance activities, from problem identification to logistics and field service guarantees. This needs to be the main focus of the SMS spin-off by taking advantage of change management momentum. Digital systems could facilitate better documentation and compliance, ensuring that maintenance activities meet regulatory standards and best practices. This will have a positive impact on the company's credibility in the eyes of customers. Even though DMI infrastructure is already available, collaborating with start-ups to accelerate digital transformation can further innovate these processes, driving competitive advantage in the maintenance industry. Researchers would like to highlight integrated one-stop maintenance services. This is a concept aligned with Feng (2021), who stated that one-stop service could improve the quality of service level. In the maintenance industry, SMS can improve their collaboration starting from the process of identifying problems in the factory on-site, starting from daily workforce maintenance to integrating maintenance logistics and work on-site or in the workshop, and carrying out field service assurance which is an SMS spin-off expertise to increase comfort for customers who entrust their equipment repairs.

Three other capability factors possessed by SMS that will be hard to become a sustainable competitive advantage are the variety of manufacturing services, plant support, and certified employees. This is because it is an essential and even mandatory capability in the maintenance services industry to capture the value. But SMS still needs to maintain its position by periodically upgrading to new machinery and employee technical skills, as well as carrying out special certifications to have an impact on competitive parity and become a temporary competitive advantage that at least competitors rarely have.

Strong financial and funding mechanisms, diverse suppliers and the ability to get the best prices, and organizations that mutually motivate, empower, and retain are essential capability areas based on intangible resources that need to be developed by SMS in order to increase its level of competitive advantage compared to its competitors. These three intangible resources need regular improvement by SMS so that they are embedded in unique patterns of routines and nurturing organizations to maintain their ability to help firms engage in competitive battles. Because intangible resources are less visible and more difficult for competitors to understand, purchase, imitate, or substitute for, firms prefer to rely on them rather than on

tangible resources as the foundation for their capabilities (Hitt et al., 2016).

After analyzing the internal factors to answer the first objective, the researcher concludes with competitor analysis in Table 7. Focus on competitors in one strategic segment group using Porter's four-corner analysis method, which uses assumptions, goals, strategies, and knowledge about the capabilities of each competitor with the aim of gaining a deep understanding of the industry structure and competitors' positions in the industry. This framework can help identify competitors' strengths and weaknesses, the strategies they use, and how they can influence the business and competitive strategies. This can be utilized to take better action in planning strategies, finding new opportunities, anticipating changes in the market, and improving the competitive position of SMS.

Table 7. Competitor Analysis

No	Company	Analysis Results
1	Company Code: SII	**Assumptions**: To be the best partner for customer **Goals**: Providing high-quality services and solution to customers **Strategy**: SII "unique" integration in services from plant construction, logistics, heavy equipment, and servicing operations **Capabilities**: Design and Planning, Construction work, Plant Support, Logistics, and Maintenance **Weakness**: Price offered is relatively high and manufacturing rely on third-party workshops
2	Company Code: TJG	**Assumptions**: Wide range producer of parts for automotive, agriculture, and heavy equipment (serve as one stop manufacturing area) **Goals**: Integrated one-stop manufacturing machine spare part provider **Strategy**: Become a provider of custom spare parts in various industries **Capabilities**: Fabrication, Gear Manufacturing, and Spare Part Production with more than fifty branches all around Indonesia **Weakness:** Every workshop has limited machines
3	Company Code: MBS	**Assumptions**: Cost leadership manufacturer **Goals**: Providing spare parts with high quality and reasonable prices **Strategy**: Become a provider of custom spare parts in various industries **Capabilities**: Engine Maintenance, Welding, Metal Spray, Pump, and Machining Parts (most customer are from shipping company) **Weakness:** Inconsistent quality of work results
4	Company Code: BCS	**Assumptions**: Precision spare parts provider **Goals**: Supporting services for energy providers and related businesses **Strategy**: Focus on machining and fabrication **Capabilities**: Machining, Shearing, Bending, CNC, and fabrication **Weakness:** No field troubleshooting experience neither services in field assurance
5	Company Code: KCE	**Assumptions**: Parent company advantages **Goals**: Supporting services for energy providers and related businesses **Strategy**: Penetrates electrical service products in O&M, E&C, and workshops to power plants in Indonesia **Capabilities**: Installation, repair, on-site electrical supervision, reconditioning and rewinding electric equipment **Weakness:** The workshop has limited machines

After identifying several competitors of SMS that have similar target segments, Table 8 analyzed that there are two main factors in market operation, competitors that focus on

offering a variety of services so that they become a one-stop service solution or focus on their specialization. The other factor is focusing either on the quality or cost of the service or product offered. Based on the results of Porter's Four Corner analysis, it can be analyzed further with Porter's Generic Strategy to determine which quadrant is the right strategy for SMS to operate compared to its competitors operating in the same market segment. Analyze the mapping positioning with a target market focus on offering a variety of services so that they become a one-stop service solution or focus on their specialization. The other factor is the basis for customer value, focusing either on the quality or cost of the service or product offered. As Ghiasi et al., (2021) suggest when firms are not completely committed either to the cost leadership, differentiation, or hybrid strategy, and utilize no strategy and are referred to as "stuck-in-the-middle". Firms that pursue a cost-leadership, differentiation, or even hybrid strategy are expected to have better performance compared to firms that are stuck-in-the-middle

Table 8. Competitor Positioning

Company	Factor	Preferences
Company Code: SII	Target Market	Broad Market
	Basis for Customer Value	Distinctiveness
Company Code: TJG	Target Market	Narrow Market
	Basis for Customer Value	Distinctiveness
Company Code: MBS	Target Market	Broad Market
	Basis for Customer Value	Lowest Cost
Company Code: BDS	Target Market	Narrow Market
	Basis for Customer Value	Lowest Cost
Company Code: KCE	Target Market	Narrow Market
	Basis for Customer Value	Distinctiveness

The researcher illustrates in Figure 7 that the proposed SMS positioning strategy is differentiation. This is due to the inherent legacy after leaving ISC, which has expertise in various fields such as CNC machining, mechanical maintenance, HLP, rotating equipment, welding fabrication, electric motors, automation, and other elements that would be useless if focusing on a narrow market, so that these factors support to penetrate the broad market. Apart from that, according to the head of SMS, during the transition, there were no options for 116 employees who were mandatory to maximize their skills, even though they all had engineering backgrounds. Where the basic wage rate for employees is already high from steel industry standard remuneration.

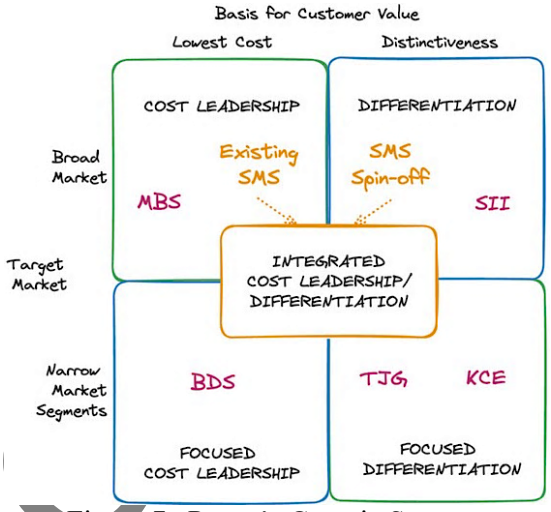


Figure 7. Porter's Generic Strategy

The strategy proposed by the researcher here is the next movement for SMS spin-off which has a customer value base and a broad target market with high experience based-cost capabilities with existing SMS core capabilities as a provider of daily labor or plant maintenance in the cost leadership quadrant. If this internal collaboration is successful and can exploit each other's capabilities, SMS as a whole can move to the fifth quadrant, "Integrated Cost Leadership/Differentiation" and gain a sustainable competitive advantage that its competitors do not have. Putra et al., (2021) proves that cost leadership strategic initiatives and service differentiation positively affect companies' performance in a highly competitive market.

Bhat et al., (2024) stated that there is not such a thing as an advantage that is ever viable just from porter generic strategy, they suggest ways to increase the possibility of sustaining any strategic advantage for the specific firms. Researchers focus on cases ISC in recent years, faced significant challenges due to intense competition from imported steel, particularly from China. This onslaught led to a

decline in market share, coupled with prolonged losses and cases of corruption. In response to these difficulties, the company embarked on a comprehensive business transformation in 2019, marking an important turning point in its business journey. Despite the uphill battle, these joint efforts paid off, culminating in achieving profitability in 2020, a remarkable achievement after almost a decade of struggle. The transformation is not only limited to operational restructuring but also includes fundamental changes in organizational practices. A spin-off will be carried out for one of the work units at ISC; Table 9 will discuss which factors are strong enough to create a spin-off creation of SMS and conduct an analysis after six months of the new strategic business unit's operation.

Table 9. Spin-off Creation Process Framework Analysis

Categories		Analysis Factors	Case Objective
Characterization	Parent company	Business Aspect	• Engaged in steel manufacturing since 1970, experienced a decline in market share due to competition with imported steel from China. • Carry-out business transformation since 2019 after experiencing losses for the last 10 years and corruption cases, managed to return to first profit in 2020
		Spin-off Policy in the Parent Organization	Policy from the parent company to carry out organizational efficiency and spin-off
		Core Business	Hot Rolled Coil, Steel Plate, Checkered Plate
	Spin-off	Business Aspect	Supporting department for the main factory providing maintenance services
		Core Business	Workshop Mechanic, Workshop Electric, Calibration Certification, Automation Services, Engineering & Project
		Spin-off Type	• Entrepreneurial Driven • Human Resources Management
Influential Factors	Internal Environment	Relationship and Support	Social networking and ability to create alliances with all ISC group subsidiaries and joint ventures
		Relationship Network (ability to establish alliances)	• Potential of being the only provider of maintenance and workshop services for factories under the auspices of ISC • Potential joint operation with KCE on optimizing workshop electrical and capture the opportunity from other parent corporation
		HR and Infrastructure	Prevention of costs burden to parent company due to short circuits and fires from the main ISC factory
		Resource Transfer	• Assets • Capital Intellectual
	External Environment	Market Opportunity	• Increasing market opportunities with indications increase in GDPR up to 72% in last 10 years • Large and potential ISC Group and joint venture maintenance service market
		Market Dynamics	• Increase in raw materials for the steel industry due to war • Competitive market due to dumping on steel imports from China

Categories	Analysis Factors	Case Objective
	Industry Maturity	Parent company maturity - highly dependent on technological advancement to reduce production prices

In this transformative journey, SMS spin-off is an important supporting department for the main factories of ISC that offers indispensable maintenance services. As the backbone of operational continuity, SMS plays an important role in optimizing factory performance and ensuring smooth production processes. In the midst of restructuring, the company also made strategic changes due to changes in company dynamics due to the short circuit tragedy of ISC main factory. If SMS, in the midst of this tragedy, continues to carry out its daily operations as usual, it will become a cost burden due to disability in the production process. In Figure 6 is an analysis of the spin-off creation process as an analysis of ISC's efforts to prove the company's resilience and adaptability in facing difficulties to become stronger and more resilient as a strong player in the steel manufacturing landscape. It is the strategy of ISC to diversify in the midst of a crisis.

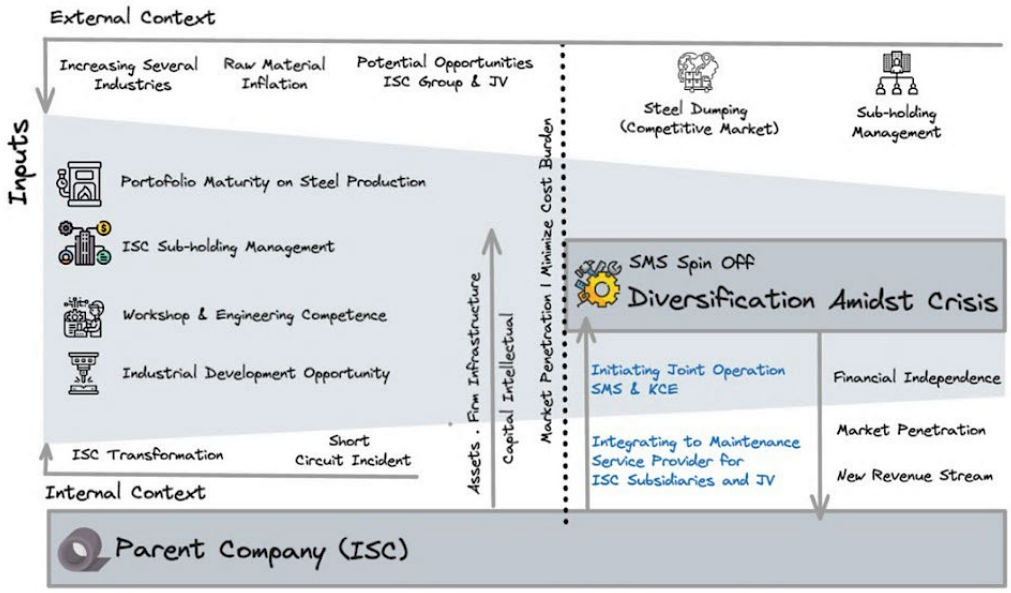


Figure 6. Spin-off Creation Process Framework (based on Table 9)

The decision to separate SMS spin-off from its parent, ISC, was influenced by various factors, ranging from market dynamics to strategic interests. This type of spin-off reflects an entrepreneurial drive with a strategic focus on human resource management. It emphasizes the cost burden during the revitalization process so that the new entity can achieve financial independence and new income for the ISC group. The spin-off journey will face several challenges, including obtaining adequate funding, establishing a strong market presence, and overcoming regulatory hurdles. Firms often struggle to balance innovation and commercial viability, ensuring that their new ideas can be translated into profitable products. Building a competent team that can drive the company forward is also important. Additionally, the challenges of maintaining steady growth and adapting to market changes require careful planning and execution. Pérez-Hernández et al. (2021) stated that the four major challenges on the spin-off process are regulation, not hiring specialists, inherent complexities, and lack of decision-makers.

Kirtley and O'Mahony (2023) stated that a pivot or spin-off reorients their strategic direction by reallocating or restructuring the firm's activities, resources, and attention through an accumulated series of decisions to address the ongoing stream of early-stage problems and

opportunities firms confront. The market opportunity for SMS is promising with indications of a significant increase in GDP per capita over the last decade, indicating favorable conditions for SMS expansion due to the many new industries that have emerged. In addition, the large and potential market within ISC Group and its joint ventures provides profitable opportunities for growth and revenue generation. Apart from that, ISC maturity and dependence on technological advances, which require very high levels of capital to reduce production costs, are strategic considerations for SMS spin-off strategy. So this spin-off process also utilizes resource transfer, which includes the transfer of assets, capital, and intellectual resources from the parent company to the SMS. This infusion of resources lays the foundation for the growth and operational progress of the new entity.

This spin-off must continue to be supported by ISC with the SMS social network to establish alliances with all ISC Group subsidiaries and joint ventures to provide strategic advantages, facilitating collaboration and synergy between diverse business units. Starting from the main factory and then to other subsidiaries that have factories. Then expanding the market reach for other ISC subsidiaries onto auxiliary business. If the internal capabilities are already qualified and competitive enough, it's time to start collaborating with the joint venture company, and this exclusive arrangement provides a competitive advantage, strengthening SMS's position as an important maintenance service provider within the group.

IV. CONCLUSION

SMS strategy for determining service positioning and customer target criteria is based on market analysis and Porter's Generic. The proposed SMS positioning strategy is "Offering comprehensive and customized one-stop maintenance service solutions for industry with quality at reasonable and competitive prices, which targets big industries in Steel manufacturing, Petrochemicals, Flour mills, Cement, Ports, and Logistics". Meanwhile, the thing that needs to be emphasized is enabling the Digital Maintenance Information which is rarely offered by competitors in this industry during the change management process on the spin-off agenda to improve workflow, simplify operational activities, as well as access to maintenance status information in order to increase the competitive advantage of increasing comfort for customers who entrust their equipment repairs.

There are two preferences regarding the differences in equipment maintenance that will be carried out for maintenance, for critical equipment and general equipment. The recommendation from this research is that SMS should focus on critical equipment that has specific market characteristics with a wide range of equipment differentiation and relies on high experience-based costs that are in line with the maintenance services industry in general. To support this strategy, it is necessary to develop skills and implement standards with suggestions including training to improve employee skills regarding the latest equipment and technology as well as providing certification to employees to meet job requirements. Then develop value supply chain activities with the aim of one-stop integrated service, and strict quality control monitoring with the aim of correcting non-conformities.

The formation of the SMS spin-off occurred due to several company's internal dynamics which were supported by external factors. The internal dynamics that occur are due to the transformation of the parent company, which wants to increase profit centers in every part of the business. As the transformation progressed, there was an incident in the main ISC factory experiencing a short circuit and the acceleration of SMS spin-off from the central maintenance department as factory maintenance support was accelerated to reduce the cost burden due to the inability to produce ISC. External factors support this business dynamic because there are indications of rapid industrial growth in the last 10 years. The strengthening of the company as a group after experiencing losses for almost a decade and making its first profit again in 2020 is also a strengthening signal for the industry's market maintenance.

The diversification of the ISC group's portfolio in the maintenance sector can be maximized with strategic support from the parent company's competitive advantage, which collaborates with KCE which has expertise in electric motor workshops, where KCE shares are 30% of ISC and 70% owned by the other parent conglomerate group as an entry point for market

penetration for SMS. The parent company's strategy for centralized service maintenance can also be implemented starting from ISC subsidiaries that have manufacturing plants and auxiliaries until its business environment is clear and could enter Joint Venture companies that have a potential market. Moreover, imagine if SMS enjoyed the privilege of being the sole provider of maintenance and workshop services for factories under the purview of the ISC group and joint venture.

Due to restrictions and confidentiality, the research will not discuss the company's financial aspects. It also does not cover the results of implementing the proposed strategy and only focuses on analyzing until providing the recommendation for the business strategy. Interpretation of the findings of this study has some limitations. First, some understanding could also be biased based on researchers' understanding of interview results and focus group discussions. These biases could mitigated by having more objectives and more inputs from all customer segments. Second, The strategy offered is still specific to the maintenance service industry that is experienced in the world of steel manufacturing. Therefore, future research needs to benchmark with other industries to get more understanding of spin-off creation focused on the parent company. Research implications for facilitating replication of the proposed spin-off framework for other industries involve consideration of three aspects. First, the parent company's need for business diversification to increase company benefits. Second, adapting to the unique challenges and needs of various industrial sectors and the adaptability of the framework. Third, foster a collaborative environment on the subject of spin-offs and carry out appropriate change management.

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