



Research Article

Optimizing Fiber Infrastructure Utilization: Strategic Analysis of PT Telkom Infrastruktur Indonesia Using SWOT and QSPM

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Abstract

Business transformation has become a strategic necessity for telecommunications companies operating in increasingly competitive and dynamic environments. PT Telkom Infrastruktur Indonesia (PT TIF), established under Telkom Group's 5 Bold Moves initiative, functions as an InfraCo entity responsible for managing and commercializing fiber network infrastructure. However, the company faces challenges related to low infrastructure asset utilization and limited external revenue generation beyond the Telkom Group ecosystem. This study aims to formulate appropriate business strategies to optimize asset utilization and improve competitiveness. A descriptive qualitative approach was employed. Data were collected through semi-structured interviews with five key informants representing PT TIF management, industry associations, and Internet Service Provider (ISP) companies, supported by direct observation and analysis of company documents and industry reports. The study utilized PESTEL Analysis, Porter's Five Forces, SWOT Analysis, Internal Factor Evaluation (IFE) Matrix, External Factor Evaluation (EFE) Matrix, IE Matrix, TOWS Matrix, and Quantitative Strategic Planning Matrix (QSPM). Results indicate that PT TIF possesses significant strengths, including extensive nationwide infrastructure coverage and strong brand support from the Telkom Group, but faces weaknesses in operational agility, marketing capability, and capital expenditure limitations. QSPM analysis identifies Network Sharing Expansion as the priority strategy to improve infrastructure utilization, increase external revenue.

Keywords: Strategic Management, SWOT Analysis, QSPM, Network Sharing, Telecommunications Infrastructure, InfraCo, Fixed Broadband

JEL Classification: M10; L21; O32

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1. Introduction

The telecommunications industry in Indonesia has experienced significant transformation in line with the rapid growth of digital technology and internet penetration. According to the Indonesian Internet Service Providers Association Association of Indonesian Internet Service Providers, internet penetration in Indonesia reached 79.5% in 2024, representing approximately 221.56 million users (APJII, 2024).

This development has encouraged increasing demand for digital infrastructure, particularly fixed broadband connectivity supported by fiber optic networks. At the same time, competition among telecommunications providers continues to intensify due to the emergence of new Internet Service Providers (ISPs) and technological advancements that enable broader market expansion. The Ministry of Communication and Digital Indonesia reported that the number of ISPs in Indonesia reached more than 1,000 companies in 2024, indicating increasingly dynamic industry competition (Komdigi, 2024). These conditions require telecommunications companies to formulate adaptive and sustainable business strategies to maintain competitiveness and improve operational performance (Rudito & Sunitiyoso, 2024).

As the largest state-owned telecommunications company in Indonesia, PT Telkom Indonesia continues to strengthen its business transformation through the implementation of the “5 Bold Moves” strategic initiative. One of the strategic actions undertaken by the company was the establishment of PT Telkom Infrastruktur Indonesia (PT TIF) in 2023 as an InfraCo entity focusing on the management and commercialization of fiber optic infrastructure. PT TIF is expected to optimize existing network assets and provide neutral wholesale connectivity services for Other Licensed Operators (OLOs). As a newly established infrastructure company, PT TIF operates in a highly competitive market where infrastructure providers compete based on network coverage, service reliability, pricing, and partnership capabilities (Porter, 1979). The company competes with established infrastructure providers and must develop a strong market position to attract wholesale customers and expand its business beyond the Telkom Group ecosystem. According to Hitt et al. (2017), organizations with valuable resources and distinctive capabilities are more likely to achieve sustainable competitive advantage and strengthen their market position. PT TIF’s extensive nationwide fiber network, strategic infrastructure assets, and support from the Telkom Group represent important resources that can support its competitiveness. However, despite possessing extensive infrastructure coverage, PT TIF faces several critical challenges, including low infrastructure asset utilization and limited external revenue generation beyond the Telkom Group ecosystem (Telkom, 2024). Data from the company indicate that the utilization rate of Metro-E BB equipment remains around 31%, while Optical Line Terminal (OLT) utilization only reaches 23%, which is significantly below industry expectations (Telkom, 2024). Such conditions indicate inefficiencies in asset utilization that may negatively affect profitability and long-term sustainability.

The rapid changes in the telecommunications industry are also driven by external environmental factors such as technological innovation, regulatory dynamics, and shifting consumer behavior. Technological developments including Artificial Intelligence (AI), Internet of Things (IoT), XGS-PON fiber technology, and Low Earth Orbit (LEO) satellite services have significantly changed the competitive landscape in the broadband industry (Gabarró et al., 2021). Furthermore, the Indonesian government’s open-access infrastructure policy has encouraged broader collaboration and network-sharing opportunities among operators. Nevertheless, the emergence of aggressive competitors and market consolidation through mergers and acquisitions has intensified rivalry in the industry (Rami Reddy Manukonda, 2023). Previous studies have shown that companies operating in highly dynamic industries require comprehensive strategic management approaches to identify opportunities and threats effectively while maximizing organizational strengths (Hitt et al., 2017). Therefore, PT TIF must formulate an appropriate strategy to improve infrastructure utilization and strengthen its competitive position in the Indonesian fixed broadband market.

Several previous studies have discussed strategic formulation in the telecommunications sector using SWOT Analysis and the Quantitative Strategic Planning Matrix (QSPM). Antoni and Asvial (2019) emphasized that infrastructure-sharing strategies can significantly improve network utility and operational efficiency in rural telecommunications development. Similarly, Ismawan and Wandebori (2024) found that telecommunications infrastructure companies require optimization-oriented strategies rather than aggressive expansion strategies to maintain business sustainability. Furthermore, Awanda et al. (2023) demonstrated that the integration of SWOT and QSPM methods provides effective strategic prioritization for improving company performance. However,

most previous studies focused primarily on strategic positioning and operational efficiency of conventional telecommunications operators or broadband providers, while limited research specifically discusses InfraCo entities such as PT TIF in the Indonesian context. Moreover, previous studies have given limited attention to service marketing dimensions that are critical in business-to-business (B2B) telecommunications markets, including service offerings, wholesale pricing structures, network coverage, branding, customer relationship management, service processes, and infrastructure reliability. According to Kotler et al. (2019) and Zeithaml et al. (2018), these dimensions are represented through the 7Ps Marketing Mix framework, which is particularly relevant for evaluating service competitiveness and customer value creation. Therefore, this study contributes to the literature by examining strategic formulation for an infrastructure-focused telecommunications company operating under a wholesale business model while considering marketing and service-related factors that influence competitiveness in the B2B telecommunications market.

In addition to the research gap, there is also a practical gap between PT TIF's strategic objectives and its current operational conditions. Although PT TIF has strong support from the Telkom Group and extensive infrastructure assets, the company still struggles with organizational bureaucracy, limited capital expenditure (CAPEX), and insufficient marketing capabilities (Telkom, 2024). These internal weaknesses may hinder the company's ability to respond quickly to market opportunities and competitive pressures in an increasingly digital and interconnected telecommunications environment. Recent studies emphasize that telecommunications infrastructure companies must adopt agile business strategies, optimize asset utilization, and leverage infrastructure-sharing models to enhance operational efficiency and long-term competitiveness (Gabarró et al., 2021; Ismawan & Wandebori, 2024; Rudito & Sunitiyoso, 2024). Furthermore, the growing demand for digital connectivity services and the emergence of open-access infrastructure models require companies to formulate adaptive strategies that balance operational efficiency, service innovation, and sustainable revenue generation (Rami Reddy Manukonda, 2023). Strategic management frameworks integrating internal and external environmental analysis remain widely applied to support strategic decision-making and prioritize business development initiatives in dynamic industries (Mohammadi, 2023; Awanda et al., 2023). Therefore, integrating SWOT Analysis, IFE Matrix, EFE Matrix, IE Matrix, TOWS Matrix, and QSPM is expected to provide a comprehensive understanding of PT TIF's strategic position and identify the most appropriate strategy for optimizing business performance and infrastructure utilization.

Based on the phenomena and research gaps described above, this study aims to analyze the business strategy of PT Telkom Infrastruktur Indonesia (PT TIF) as an infrastructure-focused telecommunications company operating under a business-to-business (B2B) wholesale model. In addition to examining internal and external strategic factors, this study considers the characteristics and requirements of PT TIF's primary customer segments, namely Internet Service Providers (ISPs) and Other Licensed Operators (OLOs), which differ in terms of network scale, geographic coverage, service requirements, and infrastructure investment capacity. Specifically, this research seeks to: (1) identify internal and external factors affecting PT TIF's business performance; (2) analyze the needs and value expectations of key customer segments in relation to network-sharing services; (3) formulate strategic alternatives using SWOT, TOWS, and IE Matrix approaches; and (4) determine priority strategies through QSPM analysis. The results of this study are expected to provide both theoretical and practical contributions. Theoretically, this research enriches the strategic management literature in the telecommunications infrastructure sector, particularly regarding InfraCo business models and infrastructure-sharing strategies. Practically, the findings may assist PT TIF management in formulating effective strategies to improve asset utilization, increase external revenue, strengthen customer value propositions, and enhance competitiveness in the Indonesian telecommunications industry. The novelty of this research lies in its focus on an InfraCo entity within Indonesia's fixed broadband market, the consideration of B2B customer requirements in infrastructure-sharing services, and the integration of multiple strategic management tools to generate comprehensive strategic recommendations.

2. Literature Review and Hypothesis

Literature Review

Strategic Management

Strategic management refers to a series of managerial decisions and actions designed to achieve organizational goals and maintain competitive advantage in a dynamic business environment. According to David (2016), strategic management consists of strategy formulation, implementation, and evaluation processes that enable organizations to respond effectively to internal and external environmental changes. Similarly, Hitt et al. (2017) explained that strategic management helps organizations optimize resources and capabilities to create sustainable competitiveness. In the telecommunications industry, strategic management becomes increasingly important because companies operate in highly competitive environments characterized by rapid technological innovation and changing customer demands (Wheelen et al., 2018). Effective strategic management allows organizations to identify market opportunities, minimize risks, and improve operational efficiency. Previous studies have also highlighted that companies implementing comprehensive strategic management practices are more capable of achieving business sustainability and long-term profitability (Rudito & Sunitiyoso, 2024).

SWOT Analysis

SWOT analysis is a strategic planning tool used to evaluate organizational strengths, weaknesses, opportunities, and threats to formulate effective business strategies. Weihrich (1982) stated that SWOT analysis enables organizations to align internal capabilities with external environmental conditions to improve strategic decision-making. The method is widely used because it provides a systematic framework for identifying factors that influence organizational performance. In addition, David (2016) explained that SWOT analysis helps companies develop alternative strategies based on combinations of internal and external factors. In the telecommunications sector, SWOT analysis has been extensively applied to determine competitive positioning and identify growth opportunities amid intense market competition (Xi, 2021). Previous research by Awanda et al. (2023) also demonstrated that SWOT analysis effectively supports strategic formulation processes by identifying organizational strengths that can be leveraged to overcome market threats and operational weaknesses.

Quantitative Strategic Planning Matrix (QSPM)

The Quantitative Strategic Planning Matrix (QSPM) is a strategic management tool used to objectively evaluate and prioritize alternative strategies based on internal and external factors. According to David (2016), QSPM enables decision-makers to determine the attractiveness of various strategic alternatives by assigning attractiveness scores to each factor. The method provides a quantitative basis for selecting the most appropriate strategy for organizational development. Furthermore, Mohammadi (2023) emphasized that QSPM improves strategic decision-making accuracy because it integrates qualitative strategic analysis with quantitative assessment. In business and telecommunications studies, QSPM has frequently been applied to identify strategic priorities and optimize organizational performance (Wardana et al., 2022). Previous studies by Djunita et al. (2022) found that QSPM effectively supports strategic prioritization by helping organizations evaluate the feasibility and attractiveness of alternative business strategies in highly competitive environments.

Porter's Five Forces

Porter's Five Forces framework is widely used to analyze industry competitiveness and evaluate factors affecting organizational profitability. Porter (1979) identified five major competitive forces, namely the threat of new entrants, bargaining power of buyers, bargaining power of suppliers, threat of substitute products, and rivalry among existing competitors. This framework helps organizations understand industry structure and formulate strategies to achieve competitive advantage. In the telecommunications industry, competitive rivalry is particularly intense due to rapid technological developments and market consolidation among service providers (Hintoro & Wijaya, 2021). Additionally, the emergence of alternative technologies such as satellite internet

and wireless broadband increases substitution threats for traditional fiber-optic providers (Gabarró et al., 2021). Therefore, Porter's Five Forces analysis is highly relevant for telecommunications companies seeking to improve competitiveness and market sustainability.

PESTEL Analysis

PESTEL analysis is a strategic framework used to evaluate macro-environmental factors affecting organizational operations and business sustainability. The framework examines Political, Economic, Social, Technological, Environmental, and Legal factors influencing strategic decision-making processes (Wheelen et al., 2018). In the telecommunications industry, political and legal factors such as government regulations, licensing policies, and infrastructure development programs significantly affect business operations (Komdigi, 2024). Economic conditions including inflation and exchange rate fluctuations also influence capital expenditure and operational costs for telecommunications providers (Gabarró et al., 2021). Moreover, rapid technological advancement and increasing digital lifestyles among consumers create both opportunities and challenges for companies operating in the broadband sector (APJII, 2024). Consequently, PESTEL analysis assists organizations in identifying external opportunities and risks that may influence long-term business performance.

Hypothesis

The Influence of Strengths on Competitive Advantage

Organizational strengths such as extensive infrastructure coverage, strong brand reputation, and competent human resources are considered essential factors influencing competitive advantage in the telecommunications industry. According to Hitt et al. (2017), organizations possessing valuable and difficult-to-imitate resources are more likely to achieve sustainable competitiveness. In the context of PT Telkom Infrastruktur Indonesia, infrastructure ownership and Telkom Group support represent strategic strengths that can improve market positioning and operational performance. Previous studies by Xi (2021), Awanda et al. (2023), Rudito and Sunitiyoso (2024), and Ismawan and Wandebori (2024) consistently found that organizational strengths positively influence competitive advantage and business sustainability. Therefore, the following hypothesis is proposed:

H1: Organizational strengths positively influence competitive advantage.

The Influence of Weaknesses on Business Performance

Organizational weaknesses such as low asset utilization, limited capital expenditure, and bureaucratic rigidity may negatively affect business performance and operational effectiveness. David (2016) argued that internal weaknesses reduce organizational responsiveness and limit the ability to exploit market opportunities effectively. In telecommunications companies, inefficient infrastructure utilization and slow decision-making processes can hinder service quality and profitability (Antoni & Asvial, 2019). Previous studies conducted by Wardana et al. (2022), Djunita et al. (2022), Mohammadi (2023), and Ismawan and Wandebori (2024) demonstrated that organizational weaknesses significantly affect operational efficiency and overall business performance. Based on these findings, the following hypothesis is formulated:

H2: Organizational weaknesses negatively influence business performance.

The Influence of Opportunities on Business Growth

External opportunities such as increasing internet penetration, digital transformation, and government support for telecommunications infrastructure development provide significant potential for business growth. APJII (2024) reported continuous growth in internet users in Indonesia, indicating expanding demand for broadband connectivity services. Furthermore, Gabarró et al. (2021) emphasized that digital transformation and infrastructure-sharing initiatives create new market opportunities for telecommunications operators. Previous research by Antoni and Asvial (2019), Awanda et al. (2023), Rudito and Sunitiyoso (2024), and Rami Reddy Manukonda (2023) found that external opportunities positively contribute to organizational growth and market expansion. Therefore, this study proposes the following hypothesis:

H3: External opportunities positively influence business growth.

The Influence of Threats on Strategic Decision-Making

External threats such as aggressive competitors, technological substitution, and regulatory complexity significantly affect strategic decision-making processes in the telecommunications sector. Porter (1979) explained that intense industry competition and substitution threats may reduce organizational profitability and market share if companies fail to adapt strategically. In addition, technological disruption from satellite internet and wireless broadband services creates additional challenges for fiber-optic infrastructure providers (Gabarró et al., 2021). Previous studies conducted by Hintoro and Wijaya (2021), Mohammadi (2023), Xi (2021), and Rudito and Sunitiyoso (2024) concluded that external threats strongly influence strategic planning and organizational sustainability. Based on these arguments, the following hypothesis is developed:

H4: External threats significantly influence strategic decision-making.

3. Data and Method

Research Design

This study employs a descriptive qualitative research design to analyze the business strategy of PT Telkom Infrastruktur Indonesia using SWOT Analysis and Quantitative Strategic Planning Matrix (QSPM). A qualitative approach was selected because the research aims to explore strategic issues, identify internal and external business factors, and formulate strategic alternatives based on comprehensive managerial perspectives. According to Creswell (2018), qualitative research enables researchers to understand social and organizational phenomena through in-depth exploration of participants' experiences and perceptions. Furthermore, David (2016) explained that strategic management studies commonly utilize qualitative methods because they allow a more flexible and holistic understanding of organizational conditions and strategic environments.

Population and Sample

The population of this study consists of stakeholders directly involved in the telecommunications infrastructure industry, particularly individuals with expertise and experience related to PT Telkom Infrastruktur Indonesia's operational and strategic activities. The sampling technique used in this research is purposive sampling, which selects informants based on specific criteria relevant to the research objectives. According to Sugiyono (2021), purposive sampling is appropriate for qualitative studies because it enables researchers to obtain information-rich participants capable of providing comprehensive insights. The inclusion criteria required informants to possess a minimum of five years of professional experience in the telecommunications industry, hold positions directly related to strategic decision-making, infrastructure management, business development, or industry regulation, and have substantial knowledge of broadband infrastructure utilization, network-sharing practices, and telecommunications market competition. Based on these criteria, this study involved five key informants consisting of internal management representatives, industry experts, and potential customers. Internal informants included the Executive Vice President (EVP) Territory 1 and the Senior Manager Regional Network Operation of PT TIF, while external informants included representatives from the Association of Indonesian Internet Service Providers (APJII), Masyarakat Telematika Indonesia (MASTEL), and an Internet Service Provider (ISP) company. These informants were selected because of their extensive industry experience and direct involvement in telecommunications infrastructure management, policy, operations, and market development, enabling them to provide comprehensive perspectives on PT TIF's strategic challenges and business opportunities.

Data Collection Technique

Data collection in this study was conducted using three primary techniques: semi-structured interviews, observation, and documentation. Semi-structured interviews were employed to obtain in-depth information regarding PT TIF's strengths, weaknesses, opportunities, and threats from the perspectives of internal and external stakeholders. According to Miles et al. (2014), semi-structured interviews allow researchers to explore participant responses more flexibly while maintaining focus on research objectives. Observation techniques were used to examine operational activities and infrastructure utilization conditions within PT TIF. In addition, documentation methods were conducted through the analysis of company reports, industry publications, strategic planning documents, and secondary data from telecommunications

institutions such as APJII and Komdigi. The triangulation of these data collection methods was intended to improve data validity and reliability.

Variable Description

This study uses strategic management variables derived from the SWOT framework, consisting of Strengths, Weaknesses, Opportunities, and Threats. Strengths refer to internal organizational capabilities that provide competitive advantages, such as extensive fiber infrastructure, strong brand reputation, and qualified human resources (Hitt et al., 2017). Weaknesses represent internal limitations that hinder organizational performance, including low asset utilization, limited capital expenditure, and bureaucratic rigidity (David, 2016). Opportunities are external conditions that can potentially support business growth, such as increasing internet penetration, digital transformation, and government infrastructure programs (APJII, 2024). Meanwhile, threats refer to external challenges including aggressive competition, technological substitution, and regulatory complexity (Porter, 1979). These variables were analyzed qualitatively using strategic management tools to identify PT TIF's business position and formulate strategic alternatives.

Data Analysis Method

The data analysis process in this study utilized several strategic management tools, namely PESTEL Analysis, Porter's Five Forces, SWOT Analysis, Internal Factor Evaluation (IFE) Matrix, External Factor Evaluation (EFE) Matrix, IE Matrix, TOWS Matrix, and Quantitative Strategic Planning Matrix (QSPM). PESTEL Analysis was used to identify macro-environmental factors affecting the company, while Porter's Five Forces analyzed industry competitiveness (Porter, 1979). SWOT Analysis was employed to synthesize internal and external factors into strategic alternatives. Furthermore, the IFE and EFE matrices were used to evaluate the significance of internal and external strategic factors through weighted scoring methods (David, 2016). The IE Matrix was applied to determine the company's strategic position, while the TOWS Matrix generated strategic alternatives based on combinations of SWOT factors (Wehrich, 1982). Finally, QSPM analysis was conducted to determine the most attractive and appropriate business strategy for PT TIF by assigning Attractiveness Scores (AS) and calculating Total Attractiveness Scores (TAS) for each strategic alternative (Mohammadi, 2023).

Research Validity and Reliability

To ensure research validity and reliability, this study applied data triangulation, source triangulation, and member checking techniques. Data triangulation was conducted by comparing information obtained from interviews, observations, and company documentation to ensure consistency and completeness of the findings. In addition, source triangulation was employed by comparing perspectives from different groups of informants, including PT TIF management, industry associations, and ISP representatives, to identify both convergent and divergent viewpoints regarding strategic challenges, infrastructure utilization, market opportunities, and competitive pressures. While internal informants generally emphasized operational constraints such as asset utilization and organizational efficiency, external informants highlighted issues related to market competitiveness, service attractiveness, and network-sharing requirements. According to Creswell (2018), triangulation enhances the credibility and trustworthiness of qualitative research by integrating multiple data sources and perspectives. Furthermore, member checking was conducted by confirming interview summaries and interpretations with selected informants to reduce researcher bias and improve the accuracy of the collected information. These procedures were implemented to strengthen the credibility, dependability, and trustworthiness of the strategic analysis and research conclusions.

4. Results

External Environment Analysis

Porter's Five Forces Analysis

Analysis of the five competitive forces reveals that PT TIF operates in a highly competitive and dynamic industry environment.

Table 1. Summary of Porter's Five Forces Analysis

Competitive Force	Key Findings	Level
Threat of New Entrants	The Job Creation Law opens markets to private and foreign players. Companies such as Northstar Group and Djarum Group are aggressively building infrastructure. Global players (Amazon Kuiper, Starlink) target rural markets via indirect investment.	High
Bargaining Power of Buyers	Buyers (ISPs/OLOs) prioritize coverage, price, and service quality. Price wars intensify buyer power as alternatives increase. Open access policies expand buyer options.	High
Bargaining Power of Suppliers	High dependency on active equipment (OLT, Metro) from global vendors. Technology lock-in risk exists, though TIF diversifies vendors to reduce dependency. Mega-vendor mechanisms provide cost efficiency.	Moderate
Threat of Substitutes	LEO satellite (Starlink Mini) and FWA (1.4 GHz spectrum) emerge as alternatives, especially in rural areas. Fiber broadband maintains superiority in price, latency, and stability.	Moderate
Industry Rivalry	Competition is intense with market consolidation through acquisitions. Price wars reduce margins. XL Smart post-merger poses significant competitive threat in nationwide coverage.	High

PESTEL Analysis

The PESTEL analysis reveals several macro-environmental dynamics affecting PT TIF. Politically, as a BUMN subsidiary, TIF is subject to directives from Danantara Asset Management and Komdigi, with the government's open-access infrastructure policy creating both opportunities and competitive pressure. Economically, declining consumer purchasing power and inflationary cost increases directly affect demand and operational costs, while currency fluctuations impact CAPEX for imported equipment. Socially, Indonesia's demographic dividend dominated by Generations Y, Z, and Alpha drives sustained demand for high-speed connectivity, with internet penetration continuing its positive trend. Technologically, fiber broadband maintains superiority, though XGS-PON adoption, AI, IoT, and autonomous network technologies require continuous investment to remain competitive. Environmentally, e-waste management and energy consumption are growing concerns, with ESG compliance increasingly required for investment access. Legally, complex licensing requirements (Jartaplok, Jartaptup), inconsistent local regulations, and infrastructure vandalism present operational challenges.

SWOT Analysis

Based on synthesis of interview data and environmental analysis, PT TIF's SWOT factors are identified as follows:

Table 2. SWOT Analysis of PT TIF

Category	Key Factors
Strengths (S)	S1: Extensive nationwide fiber network coverage including rural areas S2: Strong Telkom Group brand reputation among ISPs and OLOs S3: Certified and technically competent human resources S4: Monetizable physical assets (fiber, poles, ducts, STO) S5: Government backing and strategic BUMN positioning
Weaknesses (W)	W1: Suboptimal asset utilization (OLT: 23%, Metro-E: 31%, ODP: 55%) W2: Limited CAPEX for equipment renewal (IDR 300B p.a. vs IDR 2.6T need) W3: Slow internal bureaucracy hampering market responsiveness W4: Insufficient marketing and sales capabilities W5: Centralized provisioning processes reducing service agility
Opportunities (O)	O1: Low fixed broadband penetration (15-20%) in Indonesia O2: Demographic dividend with growing digital lifestyle demand O3: Advancing fiber technologies

	(XGS-PON, AI, IoT) O4: Government support through USO programs and spectrum auctions O5: Infrastructure/Network Sharing collaboration potential with ISPs and OLOs
Threats (T)	T1: Aggressive new market entrants with large capital (UU Cipta Kerja) T2: Market consolidation through acquisitions by large players T3: Price wars reducing profit margins to unsustainable levels T4: Substitution threats from LEO satellite and FWA technologies T5: Regulatory complexity and local regulations hampering infrastructure development

IFE and EFE Matrix Results

The IFE Matrix yields a total weighted score of 2.51, indicating a moderately strong internal position. While PT TIF possesses significant competitive advantages, particularly its extensive coverage and strong brand equity weaknesses in asset utilization and operational agility require attention.

Table 3. IFE Matrix Results

No	Key Internal Factor	Weight	Rating	Score
Strengths				
1	Extensive nationwide network coverage	0.10	4	0.40
2	Telkom Group brand reputation	0.10	4	0.40
3	Certified and competent human resources	0.08	4	0.32
4	Monetizable physical infrastructure assets	0.08	3	0.24
5	Government support as BUMN entity	0.07	3	0.21
Weaknesses				
1	Suboptimal asset utilization	0.10	2	0.20
2	Limited CAPEX for asset renewal	0.10	2	0.20
3	Slow internal bureaucracy	0.10	2	0.20
4	Insufficient marketing and sales capabilities	0.10	2	0.20
5	Low operational adaptability	0.07	2	0.14
	Total	1.00		2.51

The EFE Matrix total weighted score of 2.39 suggests that PT TIF's response to external factors is adequate but not yet optimal. The company's responsiveness to market opportunities particularly network sharing and digital lifestyle growth, requires acceleration.

Table 4. EFE Matrix Results

No	Key External Factor	Weight	Rating	Score
Opportunities				
1	Low fixed broadband penetration (15-20%)	0.10	4	0.40
2	Demographic dividend and digital lifestyle growth	0.09	4	0.36
3	Advancing fiber technology (XGS-PON, AI, IoT)	0.08	3	0.24
4	Government support through USO and spectrum auctions	0.08	3	0.24
5	Network sharing collaboration potential	0.09	3	0.27
Threats				

1	Aggressive new market entrants with large capital	0.10	2	0.20
2	Market consolidation through acquisitions	0.09	2	0.18
3	Price wars reducing profit margins	0.10	2	0.20
4	Substitution threats from LEO and FWA	0.09	2	0.18
5	Regulatory complexity and local regulations	0.08	2	0.16
	Total	1.00		2.39

IE Matrix and Strategic Position

Plotting the IFE score (2.51) against the EFE score (2.39) in the IE Matrix places PT TIF in Quadrant V the Hold and Maintain zone. This position indicates that the company should focus on market penetration and product development strategies with selective growth objectives, avoiding high-risk expansion investments while optimizing existing resources.

TOWS Matrix Strategy Formulation

Table 5. TOWS Matrix Strategy Formulation

	Opportunities (O)	Threats (T)
Strengths (S)	SO1: Market expansion into low-penetration areas leveraging extensive network coverage (S1 × O1) SO2: Leverage InfraNexia branding (S2) and expert HR (S3) to attract new partners beyond Telkom Group (O5) SO3: Develop innovative network sharing services (O5) to support national digitalization (S5)	ST1: Utilize Telkom Group resources (S2) to compete against aggressive large players (T1) ST2: Leverage infrastructure asset advantages (S4) to counter pricing pressure (T3) ST3: Utilize BUMN positioning (S5) to accelerate resolution of licensing and regulatory barriers (T5)
Weaknesses (W)	WO1: Address low asset utilization (W1) through network sharing and wholesale capacity leasing schemes (O5) WO2: Reduce CAPEX limitations (W2) by leveraging government USO programs (O4) for non-commercial expansion WO3: Streamline internal bureaucracy (W3) and improve operational adaptability (W5) to capture low-penetration markets (O1) before competitors	WT1: Reform internal governance (W3) to accelerate decision-making against aggressive new entrants (T1) WT2: Strengthen marketing function and service differentiation (W4) to reduce price war impact (T3) WT3: Enhance organizational adaptability (W5) to anticipate substitution disruption from LEO and FWA (T4)

QSPM Analysis and Strategy Prioritization

Based on the TOWS Matrix strategies, four consolidated strategic alternatives were evaluated through the Quantitative Strategic Planning Matrix (QSPM). The first strategy, Market Penetration (S1), derived from SO1 and WO3, focuses on aggressive expansion into areas with low fixed broadband penetration, particularly in non-metropolitan and rural regions. The second strategy, Network Sharing Expansion (S2), derived from SO3 and WO1, aims to maximize asset utilization through wholesale fiber connectivity and network-sharing partnerships with Internet Service Providers (ISPs) and Other Licensed Operators (OLOs) beyond the Telkom Group ecosystem. The third strategy, Cost Efficiency (S3), derived from WO2 and WT2, emphasizes optimizing operational costs, selectively managing capital expenditure (CAPEX), and improving infrastructure utilization rates. Meanwhile, the fourth strategy, Organizational Agility (S4), derived from WO3 and WT1, focuses on simplifying business processes, accelerating decision-making, and enhancing organizational adaptability to dynamic market and technological changes.

Table 6. QSPM Results Summary

Strategy	Description	Total Attractiveness Score (TAS)	Priority Rank
S1 – Market Penetration	Expansion into low-penetration markets	4.93	2nd
S2 – Network Sharing Expansion	Wholesale fiber and network sharing partnerships	5.23	1st
S3 – Cost Efficiency	Operational cost optimization and CAPEX management	4.69	3rd
S4 – Organizational Agility	Process simplification and organizational adaptability	4.42	4th

Network Sharing Expansion achieves the highest TAS of 5.23, making it the recommended priority strategy. This strategy leverages PT TIF's primary strength its extensive fiber infrastructure network—to capture the growing demand for neutral wholesale connectivity without requiring significant additional CAPEX investment. The high attractiveness of this strategy reflects its ability to address both internal challenges, such as low asset utilization, and external opportunities arising from increasing broadband demand and digital transformation trends. From a marketing perspective, successful implementation of Network Sharing Expansion requires PT TIF to develop a strong business-to-business (B2B) value proposition tailored to the needs of Internet Service Providers (ISPs) and Other Licensed Operators (OLOs). The company should offer competitive wholesale pricing schemes, flexible service-level agreements (SLAs), and scalable infrastructure-sharing solutions that enable operators to expand network coverage while minimizing capital expenditure. In addition, PT TIF should strengthen its marketing and business development capabilities by establishing a dedicated sales force with expertise in both technical and commercial aspects of telecommunications infrastructure services. The company should also develop targeted marketing materials, customer engagement programs, and strategic partnership initiatives to enhance awareness and trust among potential customers. Market Penetration ranks second (TAS: 4.93), reflecting substantial opportunities in underserved areas, while Cost Efficiency (TAS: 4.69) and Organizational Agility (TAS: 4.42) function as supporting strategies to ensure effective execution and long-term sustainability of the network-sharing business model.

5. Discussion

The Influence of Organizational Strengths on Competitive Advantage

The findings of this study indicate that organizational strengths have a positive influence on the competitive advantage of PT Telkom Infrastruktur Indonesia. The company's extensive fiber optic infrastructure coverage, strong reputation under the Telkom Group, and competent human resources contribute significantly to strengthening its position in the Indonesian telecommunications industry. These strengths enable PT TIF to expand network-sharing partnerships and improve service reliability for Internet Service Providers (ISPs) and Other Licensed Operators (OLOs). In strategic management theory, organizations possessing valuable and difficult-to-imitate resources are more capable of achieving sustainable competitive advantage (Hitt et al., 2017). The results of this study are consistent with previous research conducted by Xi (2021), which found that strong organizational resources and strategic capabilities positively affect competitiveness in the telecommunications sector. Similarly, Awanda et al. (2023) and Rudito and Sunitiyoso (2024) emphasized that infrastructure ownership and organizational reputation are critical drivers of long-term business sustainability and market competitiveness.

The Influence of Organizational Weaknesses on Business Performance

The study also found that organizational weaknesses negatively influence business performance and operational effectiveness. Internal challenges such as low infrastructure asset utilization,

limited capital expenditure, and bureaucratic rigidity reduce PT TIF's ability to respond quickly to market opportunities and customer demands. These conditions potentially hinder operational efficiency and reduce the company's competitiveness in an increasingly dynamic industry environment. According to David (2016), organizational weaknesses can limit strategic flexibility and negatively affect company performance if not managed effectively. The findings of this study are supported by Antoni and Asvial (2019), who found that inefficient network utilization significantly affects operational performance in telecommunications companies. Furthermore, Wardana et al. (2022) and Mohammadi (2023) explained that limitations in internal organizational capabilities may reduce business effectiveness and delay strategic implementation processes, especially in highly competitive industries.

The Influence of Opportunities on Business Growth

External opportunities were found to positively influence business growth and strategic development within PT TIF. The increasing internet penetration rate, digital transformation trends, and government support for digital infrastructure development provide favorable conditions for expanding broadband connectivity services in Indonesia. These opportunities encourage PT TIF to optimize infrastructure utilization and strengthen collaboration with external operators through network-sharing strategies. According to APJII (2024), the growing number of internet users in Indonesia creates substantial demand for high-speed broadband services and digital connectivity infrastructure. The findings are in line with research conducted by Gabarró et al. (2021), which concluded that technological advancement and digital transformation significantly contribute to telecommunications business expansion. Additionally, Rami Reddy Manukonda (2023) highlighted that open-access infrastructure and wholesale connectivity models create new growth opportunities for telecommunications infrastructure companies operating in increasingly competitive markets.

The Influence of Threats on Strategic Decision-Making

The results further demonstrate that external threats significantly influence strategic decision-making processes within PT TIF. The emergence of aggressive competitors, market consolidation through mergers and acquisitions, and technological substitution from satellite internet and wireless broadband services increase competitive pressure in the telecommunications industry. These conditions require PT TIF to formulate adaptive and innovative strategies to maintain its market position and operational sustainability. Porter (1979) explained that intense competitive rivalry and substitute technologies may reduce industry attractiveness and organizational profitability if companies fail to adapt strategically. The findings of this study are consistent with research conducted by Hintoro and Wijaya (2021), which found that competitive pressure significantly affects strategic planning in telecommunications businesses. Similarly, Ismawan and Wandebori (2024) emphasized that telecommunications infrastructure companies must continuously adapt to external environmental changes and technological disruption to sustain long-term business performance.

6. Conclusion

This study concludes that PT Telkom Infrastruktur Indonesia possesses significant strategic potential to strengthen its competitive position in the Indonesian telecommunications infrastructure industry through the optimization of internal strengths and external opportunities. The findings indicate that the company's extensive fiber optic infrastructure, strong organizational reputation, and support from the Telkom Group contribute positively to competitive advantage and business sustainability. However, several internal challenges such as low asset utilization, limited capital expenditure, and bureaucratic rigidity remain critical obstacles affecting operational effectiveness and responsiveness to market changes. In addition, the rapidly evolving telecommunications industry characterized by technological disruption, increasing competition, and market consolidation requires PT TIF to formulate adaptive and sustainable business strategies. Based on the SWOT, TOWS, IE Matrix, and QSPM analyses, Network Sharing Expansion emerges as the most appropriate strategic alternative for improving infrastructure utilization, increasing external revenue generation, and strengthening long-term business performance.

The managerial implications of this study emphasize the importance of improving operational efficiency, organizational agility, and strategic collaboration to maximize PT TIF's infrastructure capabilities. Management is encouraged to accelerate network-sharing partnerships with Internet Service Providers (ISPs) and Other Licensed Operators (OLOs) through the development of open-access and wholesale connectivity services. This recommendation is consistent with the experience of telecommunications operators in Europe and several Asian countries, where network-sharing models have successfully improved infrastructure utilization, reduced capital expenditure, and expanded broadband coverage (Gabarró et al., 2021; Rami Reddy Manukonda, 2023). Therefore, PT TIF should strengthen internal governance, simplify business processes, improve decision-making flexibility, and enhance service innovation to support sustainable business growth and strengthen its competitive position in Indonesia's telecommunications industry.

Recommendation

PT Telkom Infrastruktur Indonesia is recommended to prioritize Network Sharing Expansion by strengthening partnerships with Internet Service Providers (ISPs) and Other Licensed Operators (OLOs) to optimize infrastructure utilization and increase external revenue. The company should also improve organizational agility through faster decision-making processes and simplified operational procedures to respond effectively to market dynamics. In addition, PT TIF needs to enhance marketing capabilities, expand service innovation, and selectively allocate capital expenditure toward high-potential digital infrastructure projects to maintain competitiveness and support sustainable business growth in the Indonesian telecommunications industry.

Limitations and avenue for future research

This study is limited by its qualitative approach, small number of informants, and focus on a single telecommunications infrastructure company, which may restrict the generalizability of the findings. In addition, the analysis relies heavily on managerial perceptions and strategic evaluation tools. Future research is recommended to apply quantitative methods, involve broader industry samples, and compare multiple InfraCo companies to produce more comprehensive and generalizable strategic insights.

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