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Strategic Competitiveness Framework for Indonesian TIC Companies: Integrating Porter's Five Forces and Dynamic Capabilities in the Global Market

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ABSTRACT: The Indonesian Testing, Inspection, and Certification (TIC) industry faces significant challenges amidst global economic recovery and intensified competition, with national firms yet to achieve a top 20 global revenue position. This study proposes an integrated strategic framework, combining Porter's Five Forces with Dynamic Capabilities, to enhance the competitiveness of Indonesian TIC companies. The research employed a rigorous mixed-methods approach, involving descriptive analysis, Interpretive Structural Modeling (ISM), and Analytic Hierarchy Process (AHP), with data collected from 208 managerial-level respondents (Senior Manager and above) and 4 experienced experts. Analysis reveals that the threat of new entrants is the most critical external competitive factor, while innovation and digitalization emerge as paramount strategic priorities for long-term competitive advantage. Among Porter's generic strategies, the Focus (niche market) strategy is identified as most effective, particularly in Indonesia's "red ocean" market, where differentiation and specialization are essential. The ISM model delineates a multi-level competitiveness structure, demonstrating that sustainable competitive advantage is fundamentally driven by dynamic capabilities such as innovation, collaboration, customer bonding, and digital transformation. This study provides a context-specific framework for Indonesian TIC companies, emphasizing the strategic alignment of internal dynamic capabilities with external industry dynamics, thereby theoretically enriching strategic management by integrating Porter's Five Forces and Dynamic Capabilities, and practically guiding national TIC firms in developing adaptive strategies for global competition and long-term resilience.

Keywords: competitiveness, TIC, porter's five forces, dynamic capabilities, competitive strategy, ISM, AHP.

I. INTRODUCTION

The global Testing, Inspection, and Certification (TIC) services market is undergoing rapid expansion, driven by an increasing demand for quality and safety-related services across various industries [1]. In the realm of Testing, Inspection, and Certification (TIC), services encompass the testing of materials and goods for standard conformance, inspection for safety and quality adherence, and certification to attest compliance with national or international standards. A growing trend among TIC firms is outsourcing to cut costs and boost expertise. These services are vital across numerous sectors, including consumer goods, agriculture, medical, chemical, construction, and energy. The rapid growth of the global TIC market is attributable to the contributions of these divisions [2].

The global TIC market is predicted to expand at a compound annual growth rate (CAGR) of 4.26% between 2024 and 2032 [2]. This expansion is driven by the increasing focus of many businesses on providing products or services, prioritizing safety and quality. Concurrently, dynamic regulatory changes and geopolitical tensions

have the potential to impede the TIC market's growth. It is anticipated that inspection services will be the fastest expanding segment, with a CAGR of 5.5% per year. This is followed by certification services, which are projected to account for 20% of the market by 2032 [2]. The development of complex and evolving legal frameworks, in conjunction with the integration of novel technological advancements, is propelling the expansion of the market.

The Indonesian TIC market, valued at approximately USD 561 million in 2022, is projected to reach USD 650.96 million by 2027 [18]. This valuation, however, represents a mere 0.23% of the global market share, underscoring the limited competitiveness and international penetration of national TIC companies. A study by IDSurvey estimates Indonesia's TIC market size at approximately IDR 22 trillion, yet its absorption of the global TIC market remains remarkably low, at just 0.23%. This limited market penetration suggests that even with significant potential, Indonesian TIC companies often struggle to capitalize on opportunities. This challenge is evidenced by national private TIC firms divesting specific scopes or ceasing operations in certain business units, such as inspection or laboratory services. Such decisions are typically driven by an inability to compete and a strategic pivot towards focusing on services with established client bases. Consequently, these divested or closed business units are frequently acquired by global companies.

The TIC industry is characterized by a high degree of competitiveness, with numerous entities offering analogous services [5]. For national TIC companies, an industrial structure approach is employed, utilizing Porter's Five Forces model complemented by elements of dynamic capabilities (DCs). Porter's Five Forces model is considered static and normative, making it less effective in explaining and addressing rapidly changing market dynamics, innovation, and technological advancements [19-21]. The application of Porter's Five Forces model in the contemporary TIC industry is debated due to its difficulty in addressing the complexity and rapid pace of technological change, especially for SMEs, as indicated by market analysis reports [11,12,21]. Given these considerations, companies can utilize Porter's Five Forces as a market competitiveness model, but it's crucial to also incorporate more dynamic and holistic tools and approaches, such as dynamic capabilities (DCs), to develop effective business strategies that adapt to industry challenges. Prior research highlights the critical role of dynamic capabilities (DCs) in strategic management for ensuring corporate adaptation and sustainability amidst rapid business environmental changes, with some studies integrating DCs with concepts like analytic capabilities and the resource-based view [22-24]. This study integrates Porter's Five Forces model with Dynamic Capabilities (DCs) to develop a more adaptive framework for competitiveness within the current TIC business environment. Furthermore, it modifies the conventional DC dimensions by replacing "Exposure to Change Management" with "Collaborative Capability".

This study aims to map the competitiveness of Indonesian TIC companies (both State-Owned and National Private) using Porter's Five Forces and Dynamic Capabilities frameworks to tackle global competition. It will then develop a "competitiveness routing" based on these insights and formulate priority strategies for these companies in the global market. Theoretically, this research reinforces the relevance of the Resource-Based View (RBV) as a complement or alternative to the Market-Based View (MBV). Thus, its scientific contribution lies in enriching the strategic discourse by opening avenues for combinative approaches that respect the epistemological differences between theories. Practically, this research finds that the limitations of Porter's Five Forces approach in addressing adaptive strategic needs have direct implications for the managerial practices of national TIC companies.

II.LITERATURE REVIEW

1. DYNAMIC CAPABILITIES (DCs)

In contrast to the conventional Resource-Based View (RBV) assumptions, which prioritize higher homogeneity and substitutability across enterprises, DCs are imperative in addressing the dynamic global competitive factors [9]. According to the principles of DC theory, a company's competitiveness is contingent upon its capacity to demonstrate superior performance within a perpetually evolving environment. Factors such as increased global competitiveness, shorter product life cycles, and rapid technical advancements transform the static RBV perspective into a more complete DC. The DC refers to a concept that addresses the

increasing complexity of external and internal environments, urging businesses to continuously align their policies with evolving market conditions [10]. Empirical studies in various industries have confirmed the importance of DCs, such as innovation, learning, and collaboration, in helping companies navigate regulatory pressures, technological changes, and competitive challenges [11]. In essence, DCs serve as a foundational element for strategic agility, thereby empowering firms to maintain relevance and competitiveness within complex and volatile marketplaces.

2. PORTER'S FIVE FORCES MODEL

Porter's Five Forces is a strategic framework developed by Michael E. Porter [12] to analyze industry competition and shape effective business strategies. The model under consideration consists of five key forces: threat of new entrants, bargaining power of suppliers, bargaining power of buyers, threat of substitutes, and intensity of competitive rivalry. Each of these forces reflects structural characteristics that shape competitive dynamics, such as economies of scale, switching costs, capital requirements, supplier concentration, product differentiation, buyer sensitivity, and market growth rates [13]. Despite its extensive utilization, the model exhibits constraints when applied to the Indonesian TIC industry. The distinctive geographic characteristics of Indonesia, namely its status as an archipelago, are of paramount importance in the context of local network presence and branch accessibility. These factors, which are critical for competitiveness, are not fully addressed by Porter's model. Moreover, government regulations that support local industries, such as requirements for domestic component level (Tingkat Komponen Dalam Negeri, TKDN) and SOE synergy policies, provide national TIC companies, including both SOEs and private enterprises, with a competitive advantage over global players. Consequently, the Porter's model alone is inadequate for a comprehensive explanation of the national TIC sector's competitive landscape. This present study incorporates this with the DCs framework—emphasizing innovation, digitalization, collaboration, customer solutions, and bonding—to more accurately redesign a competitiveness model suited for the unique environment of Indonesia's TIC industry.

3. PORTER'S FIVE FORCES MODEL AND DYNAMIC CAPABILITIES (DCs)

3.1. Porter's Five Forces Model

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3.3. Integration Of Porter's Five Forces Model and Dynamic Capabilities (DCs)

This research will outline the global competitive strategy routing for Indonesian Testing, Inspection, & Certification (TIC) companies, integrating Porter's Five Forces and Dynamic Capabilities perspectives, as illustrated in the FIGURE 1. below.

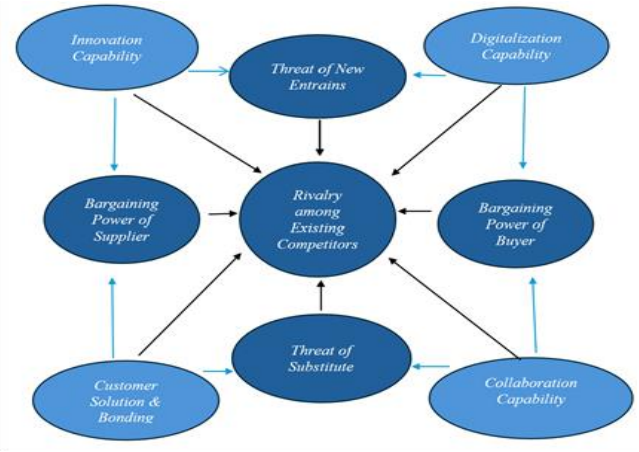

FIGURE 1. Elements of market competitiveness (Porter) and dynamic capabilities (DCs).

Figure 1 presents a theoretical framework integrating Porter's Five Forces and Dynamic Capabilities (DCs) to explain sustainable competitive strategy. Porter's framework defines five external forces (new entrants, supplier/buyer power, substitutes, rivalry) that shape industry structure and competition. Conversely, internal dynamic capabilities such as innovation, digitalization, collaboration, and customer solutions serve as strategic tools enabling firms to respond to or leverage these external pressures.

This approach is theoretically supported by Spanos & Lioukas [25] who describe DCs as causal mechanisms linking the external environment to strategic value creation through processes like sensing, seizing, and reconfiguring, especially in dynamic competitive landscapes. Bandieri & Castellini [26] provide empirical validation from the Italian wine industry, showing that differentiation via strong marketing and collaborative networks leads to better performance than pure cost efficiency, underscoring the fit between internal strengths and external pressures. They further highlight digitalization and servitization as crucial aspects of business model reconfiguration, making digital capability integral to modern competitive strategies, particularly in service sectors like TIC.

4. INTERPRETIVE STRUCTURAL MODELING (ISM)

Interpretive Structural Modeling (ISM) is a methodology employed for the analysis and visualization of relationships between elements of a given issue through the use of directed graphs. Warfield's [14] contributions lie in the field of Structural Modeling (SM), which emphasizes qualitative visualization of variable interconnections, and by incorporating expert group judgments to define pairwise relationships [15].

The ISM model is characterized by its structured, multi-level visual design, which aims to reflect the contextual relationships among key elements. It integrates graphical and verbal representations to facilitate managerial action and decision-making. ISM, a computer-assisted learning process, facilitates the identification of relationships between elements and the delineation of problem structures by individuals or groups [16]. The flexibility of ISM enables it to manage both qualitative and quantitative components in a variety of complex scenarios, thereby demonstrating its efficacy as a potent instrument for the systematic organization of complexity and the documentation of collective cognitive processes.

5. ANALYTICAL HIERARCHY PROCESS (AHP)

Analytic Hierarchy Process (AHP) is a decision-making method that utilizes pairwise comparisons to determine priorities among various alternatives based on multiple criteria. The model employs a hierarchical structure to categorize complex decisions into distinct levels, namely goal, criteria, sub-criteria, and alternatives. AHP is a methodical approach that involves several key steps. First, the problem is defined. Next, a hierarchical structure is created. Then, pairwise comparisons are performed using a 1–9 scale. After that, weights are calculated. Finally, consistency is checked through a consistency ratio to ensure logical judgments [17, 18].

III. MATERIAL AND METHOD

This study utilized a post-positivism paradigm as its philosophical foundation. The emphasis on observing, analyzing, and interpreting social realities through empirical evidence is a hallmark of this approach. Post-positivism, on the other hand, acknowledges the subjective nature of knowledge and employs a combination of observational studies and theoretical frameworks to interpret human behavior [19]. This study develops three research questions, which are presented in the following Table 1:

Table 1. Research questions and paradigms used.

No.	Research Question	Paradigm	Methods
1.	How is the competitiveness map of Indonesian TIC companies, especially the SOEs and national private companies, from the perspective of Porter's Five Forces and dynamic capability elements to face global competition?	Positivism	Quantitative – Documentation – Descriptive analysis
2.	How is the competitiveness model of Indonesian TIC companies from the perspective of Porter's Five Forces and dynamic capability elements to face global competition?	Post-positivism	Qualitative – Interview – Descriptive analysis and ISM
3.	How do Indonesian TIC companies formulate their priority strategy in the face of global competition?	Positivism	Quantitative – Questionnaire – AHP

This study employed mixed methodologies with an explanatory sequential design. This study begins with the employment of a two-phase design strategy, as it commenced with the collection of quantitative data and

subsequently transitioning to the collection and analysis of qualitative data [19]. The initial stage of this study involved conducting a document review, encompassing the utilization of various information sources, including legislative acts and regulations, secondary data from the central government, the Ministry of SOEs, Statistics Indonesia, Holding Jasa Survey (id Survey), which exercises oversight over Indonesian SOE TIC companies and their subsidiaries, as well as Global TIC, Report mass media outlets, scientific journals, and other pertinent sources, and the national private TIC companies. This study used Slovin's formula to determine a minimum sample of 205 respondents for population representation. The final sample included 208 managerial-level respondents (Senior Manager and above) and 4 experts (two global TIC directors, two academics), chosen for methodological and substantive reasons. Data collection employed a mixed-methods approach, combining questionnaire surveys and interviews with triangulation to ensure the validity and reliability of the findings.

IV. RESULTS AND DISCUSSION

1. COMPETITIVENESS MAPPING OF INDONESIAN TIC COMPANIES

Table 2. Results of KMO, bartlett's and Cronbach's alpha tests.

No.	Dimension	KMO	Bartlett's Test			Cronbach's Alpha
			Approx. Chi-Squared	df	Sig.	
1.	Threat of new entrants	0.932	2024.630	91	0.000	0.918
2.	Bargaining power of suppliers	0.963	3771.836	171	0.000	0.964
3.	Bargaining power of buyers	0.940	2039.320	66	0.000	0.932
4.	Threat of substitutes	0.958	2180.108	55	0.000	0.944
5.	Intensity of competitive rivalry	0.975	4918.480	190	0.000	0.978
6.	Dynamic capabilities	0.965	3939.964	153	0.000	0.971

The results of this study reveal a comprehensive competitiveness mapping of Indonesian TIC companies, particularly among SOEs and private national enterprises, within the context of global market challenges. A descriptive analysis was employed to evaluate six strategic dimensions: threat of new entrants, bargaining power of suppliers, bargaining power of buyers, threat of substitutes, intensity of competitive rivalry, and Dynamic Capabilities (DCs). Preliminary analysis of the descriptive data processing reveals that the "threat of new entrants" demonstrates a high degree of reliability (Cronbach's alpha = 0.918) and suitability for factor analysis (KMO = 0.932, significance = 0.000). These robust psychometric properties confirm the validity and consistency of the 'threat of new entrants' construct for further analysis. Furthermore, the majority of respondents expressed high ratings for factors associated with the threat of new entrants (TNE) in the TIC industry, exemplified by predominant responses at scales 5 and 6 (e.g., TNE10: 40.1% at 5, 30.9% at 6). This strong consensus among respondents indicates a significant perceived vulnerability to new entrants within the Indonesian TIC sector. The findings consistently show that industry participants, encompassing both SOEs and private national TIC entities, perceive the prospect of new market entrants as a substantial threat with the potential to adversely affect market competitiveness.

Table 3. Competitiveness Map of Indonesian TIC companies in facing global competition.

No.	Dimension	Mean
1.	Intensity of competitive rivalry	5.02
2.	Threat of substitutes	4.88

3.	Bargaining power of suppliers	4.70
4.	Bargaining power of buyers	4.82
5.	Threat of new entrants	4.89

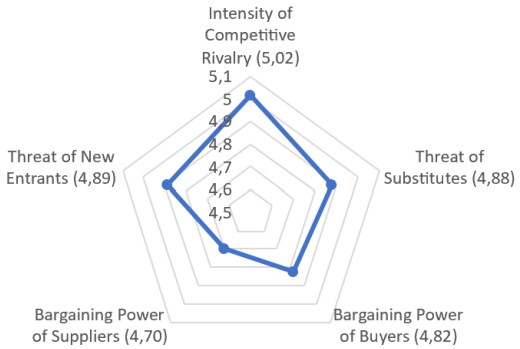

FIGURE 2. Pentagon map of competitiveness of Indonesian TIC companies.

Figure 1 presents a competitiveness map of Indonesian TIC companies, including SEOs and national private companies which utilizes the conventional Porter's Five Forces dimensions [12]. Figure 1 provides a comprehensive overview, indicating that Indonesian TIC companies demonstrate notable capabilities across all dimensions. Their primary strength lies in effectively managing direct competition. However, as demonstrated more clearly in Figure 2, their level of competitiveness remains inferior to that of global TIC companies. Figure 2 below presents the competitiveness map of the global TIC companies as outlined by [1].

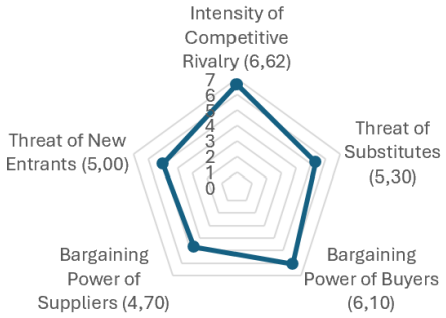

FIGURE 3. Pentagon competitiveness map of global TIC companies

In contrast to global TIC companies, all competitiveness dimensions fall under the "high" category. However, none have reached the "very high" category. The Indonesian TIC companies have demonstrated a mean score of 5.02 on the dimension of intensity of competitive rivalry, which is below the global mean score of 6.62. The bargaining power of suppliers records the lowest mean (4.70), yet it remains within the "high" category, akin to global benchmarks.

Further, the threat of new entrants is measured at a mean of 4.89, indicating a high level of preparedness that is commensurate with the global score of 5.00. This suggests that Indonesian TIC companies are well-positioned to face potential market entrants. The market is characterized by significant entry barriers, including accreditation requirements, infrastructure investment, certified personnel, and brand reputation. These barriers contribute to the complexity of market penetration. The respondents noted the company's strong capabilities in brand building, customer trust, and distribution access. However, smaller local players may gain market share by offering lower-cost services, particularly in niche geographical areas.

Additionally, the threat of substitutes is identified as being in the "high" category, with a mean of 4.88, which is slightly below the global mean score of 5.30. The threats to substitutes include in-house inspections, digital technologies, automated systems, and remote audits. The respondents evaluated the companies favorably, particularly in regard to their ability to adapt to technological changes and maintain customer loyalty. The transition to virtual inspections during the pandemic demonstrates how substitutes can potentially diminish demand for conventional TIC services.

Moreover, the bargaining power of suppliers receive the lowest mean score (4.70) while still maintaining a classification of "high". This force encompasses suppliers of testing equipment, external experts, supporting software, and third-party laboratories. The competitive supplier landscape, standardization of services, and low switching costs have been shown to reduce supplier power, mirroring global conditions.

Furthermore, the mean score of 4.82 for the bargaining power of buyers indicates a high degree of competitiveness, though it falls significantly below the global mean of 6.10, which is categorized as "very high". The high buyer power is attributable to three factors. First, there is an abundance of TIC providers. Second, there are low switching costs, especially in non-regulated sectors. Third, there is increased customer awareness of pricing and service quality. The influence of buyer power is predominantly shaped by the number of service providers, the costs associated with switching, and the degree of product differentiation.

In addition, the intensity of competitive rivalry is the highest-rated dimension, with a rating of 5.02. This suggests that the companies possess a strong capability to handle market competition. Nevertheless, it remains comparatively deficient in relation to global companies, with a score of 6.62. The TIC industry in Indonesia is characterized by intense competition, with numerous respondents emphasizing the significance of maintaining quality, innovation, and brand image. The impetus for this competition stems from several factors, including industry growth, the number of players in the market, the presence of entry and exit barriers, and the degree of service differentiation.

Meanwhile, the DCs dimension illustrates that the company's ability to innovate, digitalize, collaborate, and manage solutions and customer relationships is important in maintaining competitiveness [10]. Companies with good dynamic capabilities tend to be better prepared to face changes in the market, technology, and regulations, and can create sustainable competitive advantages amidst tight industry competition. The following Table 4 illustrates this phenomenon as follows:

Table 4. Dynamic capability map of Indonesian TIC companies

No.	Dimension	Mean
1.	Dynamic capability	4.86
2.	Innovation capability	3.69
3.	Digitalization capability	4.92
4.	Customer solution & bonding capacity	5.04
5.	Collaborative capability	5.06

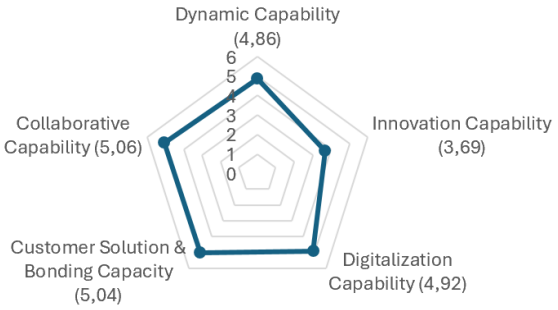

FIGURE 4. DC map of Indonesian TIC companies.

As illustrated in Figure 3, the DC map of Indonesian TIC companies, particularly SOEs and national private enterprises, is classified as "high" across the majority of the evaluated domains. However, innovation capability is an exception, with a score of 3.69, placing it in the "moderately high" category. This finding underscores the imperative for Indonesian TIC companies to bolster their innovation capacity to enhance their competitiveness in the context of Porter's Five Forces model.

Overall, the findings of this study are consistent with the competitiveness map of global TIC companies (Figure 4: Porter's Five Forces Analysis), particularly in dimensions such as the intensity of competitive rivalry, threat of substitutes, threat of new entrants, and bargaining power of buyers. The only salient difference is in the bargaining power of suppliers, where Indonesian TIC companies face greater challenges than their global counterparts. This suggests that, while the structure of Indonesia's TIC industry generally mirrors global trends, local characteristics particularly the limited availability of technical resources and skilled professionals significantly influence the competitive landscape.

FIGURE 5. Porter's five forces analysis.

2. *ISM RESULTS*

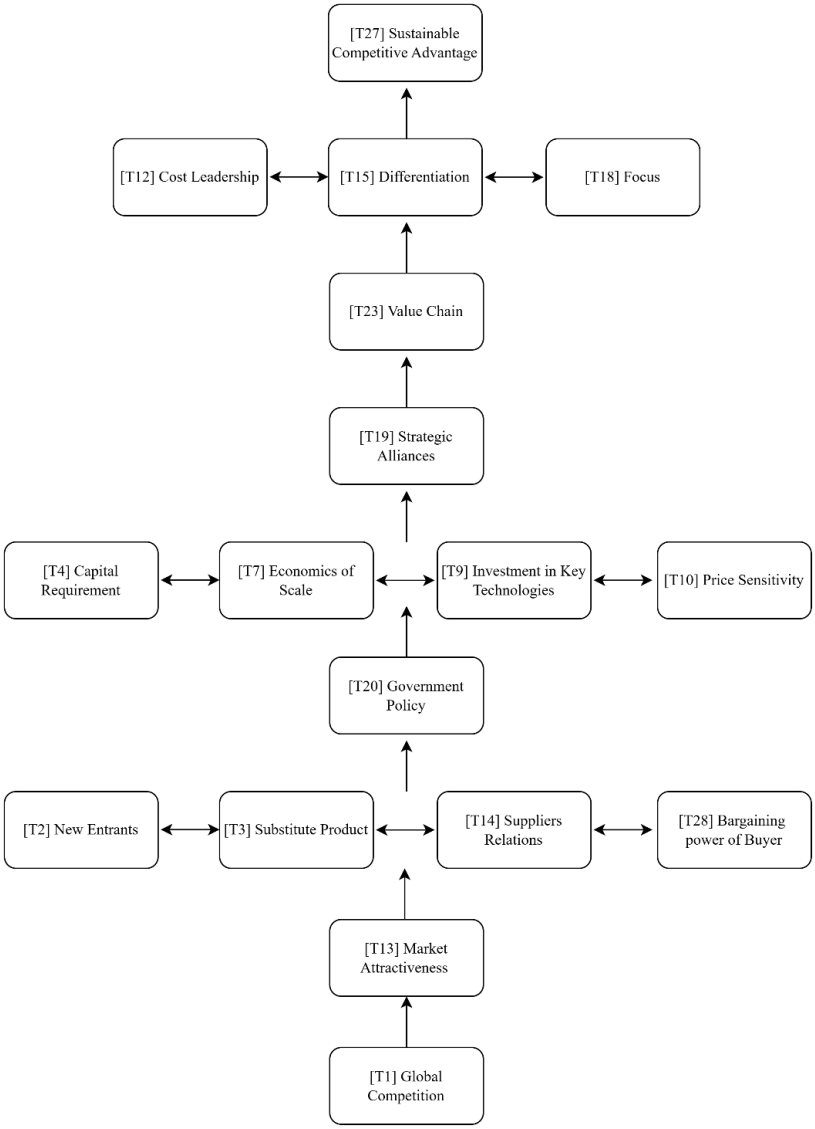

FIGURE 6. Final ISM model: porter's five forces.

The final ISM model developed in this study identifies 17 elements of competitiveness derived from Porter's Five Forces, mapped across nine hierarchical levels. Global competition is foundational to the hierarchical structure (Level 9), thereby serving as the predominant catalyst for the competitiveness of Indonesian TIC companies. This element is indicative of the intense rivalry with global TIC companies, particularly with regard to service quality, international recognition, and trust. As the enterprise progresses to Level 8, market attractiveness assumes a strategic role, encompassing the capture of market growth and profitability potential, particularly within sectors such as food and renewable energy. Level 7 comprises critical external pressures, including supplier relations, threat of substitutes, threat of new entrants, and buyer power. These elements represent the structural competition from the external environment and influence the strategic direction of TIC companies.

At Level 6, government policy functions as an intermediary factor, exerting dual impacts that influence both market access and internal corporate strategies. These impacts manifest as either regulatory support or barriers, depending on the specific circumstances. Level 5 encompasses internal drivers such as price sensitivity, investment in key technologies, economies of scale, and capital requirements. These factors are indicative of the internal capabilities required to respond effectively to external pressures. At Level 4, strategic alliances enable companies to build collaborative strength, expand market reach, and share innovation resources. Level 3 underscores the significance of an integrated and efficient value chain, as client expectations of transparency, expediency, and seamless service are on the rise.

Further, Level 2 encompasses Porter's three generic competitive strategies: cost leadership, differentiation, and focus. These strategies are critical to achieving a competitive advantage in the marketplace and assist companies in articulating their competitive positioning, whether through cost leadership, unique value proposition, or specialization in niche markets. At the pinnacle of the hierarchical structure (Level 1) is sustainable competitive advantage, the overarching objective of TIC companies. This phenomenon is indicative of the organization's capacity to sustain a robust and long-standing market position, a feat achieved through the possession of invaluable, rare, inimitable, and non-substitutable capabilities. This competitive advantage is predicated on innovation, digital transformation, operational efficiency, strategic collaborations, and customer trust.

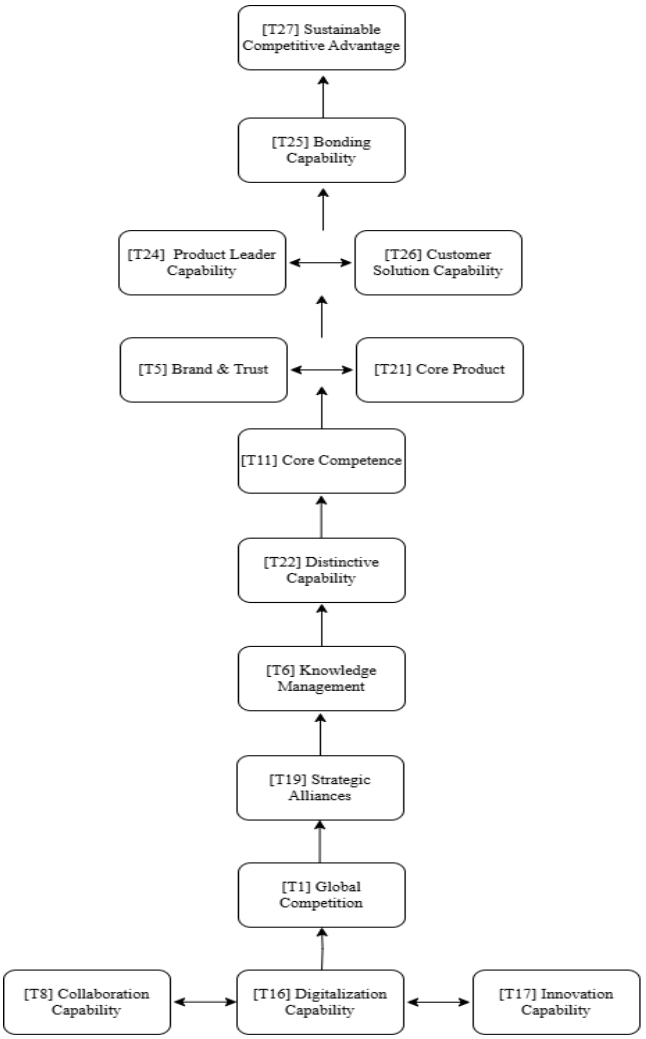

FIGURE 7. Final ISM model: DCs.

In the face of mounting global competition, companies in the TIC sector must transition from static advantages to DCs. The DCs are organizational skills that enable continuous adaptation to shifts in market conditions, regulations, and technology. This present study employed the ISM method to construct a hierarchical framework, thereby illustrating the systemic interaction of these capabilities and their role in enhancing competitiveness. At the foundational level (Level 10), three critical capabilities are identified: digitalization, collaboration, and innovation. Digitalization capability enables TIC companies to automate processes, improve service speed and accuracy, and respond in real-time to client needs. Collaboration capability enables strategic partnerships with laboratories, universities, and international bodies, thereby providing companies with access to external expertise, technologies, and resources. Innovation capability supports the creation of new services, business models, and problem-solving approaches in response to evolving client demands and global standards.

In the context of global competition, specifically at Level 9, external forces play a pivotal role in prompting innovation and the formation of strategic alliances among TIC companies. This dynamic engenders pressure to mirror the reputations, technological capabilities, and operational standards of international firms. Companies frequently establish strategic alliances (Level 8) with foreign institutions, such as Memorandum of Understanding (MoU), with the objective of accessing global markets, enhancing legitimacy, and accelerating organizational learning.

Further, at Level 7, knowledge management is pivotal in the retention and distribution of expertise, the facilitation of ongoing learning, and the assurance of consistent service quality. As organizations mature, they begin to develop distinctive capabilities (Level 6). These capabilities are defined as specialized strengths rooted in deep sectoral experience and customer understanding that are difficult for competitors to replicate. These competencies are supported by core competencies (Level 5), such as technical expertise, certified personnel, and experience navigating regulatory systems. These core competencies are built through long-term investments in human resources and processes.

Furthermore, at Level 4, core product offerings (e.g., certifications, inspections, testing) and brand trust become pivotal factors. These elements represent the tangible interface between internal capabilities and market perception. In the TIC industry, where trust, accuracy, and regulatory compliance are paramount, maintaining a strong reputation is of the essence. This foundation enables firms to deliver customized customer solutions and exhibit product leadership (Level 3)—the ability to anticipate market needs, innovate proactively, and shape industry standards.

Besides, at Level 2, bonding capability becomes a pivotal aspect of the company's operations, as the capacity to establish long-term, trust-based client relationships is a crucial indicator of the company's overall performance. The transition of companies into the role of service providers and strategic partners is facilitated by the provision of consultative services and the implementation of client-oriented strategies. Ultimately, at the pinnacle of the hierarchical structure (Level 1), the synthesis of these capabilities culminates in a sustainable competitive advantage. Achieving this objective necessitates more than cost leadership; continuous adaptation, systemic innovation, and profound client engagement are also imperative.

3. AHP RESULTS

Table 5. Eigenvalue.

No.	Code	Dimension	Value
1.	C1	Threat of new entrants	0.52
2.	C2	Bargaining powers of suppliers	0.29

3.	C3	Bargaining powers of buyers	0.11
4.	C4	Threat of substitutes	0.05
5.	C5	Intensity of competitive rivalry	0.03

Table 6. Consistency ratio.

No.	Consistency	Value
1.	Consistency Index (CI)	0.10
2.	Random Index (IR, n=6)	1.12
	Consistency Ratio (CR)	0.089 or 8.9%

Table 7. Priority strategy of global TIC companies – Porter's Five Forces).

No.	Alternative Strategy	Global Weight	Rank
1.	Focus (niche market)	0.79	1
2.	Cost leadership	0.14	2
3.	Differentiation	0.07	3

Table 8. Priority strategy of global TIC companies - DCs.

No.	Alternative Strategy	GlobalWeight	Rank
1.	Innovation capability	13.71	1
2.	Digitalization capability	8.06	2
3.	Customer solution & bonding capacity	3.99	3
4.	Collaboration capability	1.25	4

The AHP process entailed the structuring of the decision problem, the conduction of pairwise comparisons, the calculation of priority weights through eigenvector methods, and the validation of the consistency of expert judgments. This yielded an acceptable consistency ratio of 8.9%. This study evaluates DCs as strategic alternatives, including innovation capability, digitalization capability, customer solution and bonding capacity, and collaboration capability, while still employing Porter's Five Forces as the evaluation criteria. Innovation capability emerges as the highest priority, with a global weight of 13.71. It is considered essential for long-term competitiveness through continuous improvement of services, adoption of new technologies, and market adaptation. Digitalization capability follows with a weight of 8.06, thereby underscoring the significance of data integration, real-time reporting, and operational efficiency. Customer bonding and solution capability receive a score of 3.99, a notable accomplishment in the realm of managing buyer power through the cultivation of client loyalty and the provision of customized service experiences. Collaboration capability, with a weight of 1.25, is also regarded as important but secondary, effective only when internal capabilities such as innovation and digital infrastructure are already strong. In conclusion, the AHP analysis robustly confirms that innovation and digitalization are the most critical dynamic capabilities for Indonesian TIC companies, enabling them to strategically address competitive pressures and secure long-term advantage.

V.CONCLUSION

This study introduces a framework for Indonesian TIC companies, integrating Porter's Five Forces and Dynamic Capabilities (DCs). We found that while Porter's model identifies external pressures, it's insufficient for the dynamic TIC sector. Instead, DCs (innovation, digitalization, customer engagement, collaboration) are crucial for internal adaptability and long-term competitiveness. Indonesian TIC firms, both SOEs and private, must prioritize innovation and digital transformation. A Focus (niche market) strategy is most effective in competitive "red ocean" environments. Our multi-level model, built using ISM and AHP, shows sustainable advantage comes from foundational capabilities, market responsiveness, and strategic positioning, underscoring the need for dynamic, integrated strategies.

Theoretically, our findings highlight Porter's limitations, reinforcing the Resource-Based View (RBV) by proving internal dynamic capabilities are vital for sustained advantage. Practically, Indonesian TIC companies can't just rely on external analysis; they must actively develop and leverage core internal capabilities, especially in innovation and digital transformation. This means proactive development, strategic collaboration, and regular Porter's reviews. Focusing on key sectors (energy, food, manufacturing) with digital transformation and innovation will strengthen customer loyalty and global competitiveness. This study has limitations. Future research should delve into the mechanisms of collaboration capability and the implementation challenges of digital transformation in Indonesian TIC firms. Longitudinal studies could track DC evolution, and expanding to other developing TIC markets would offer comparative insights.

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Author Contributions

Author 1 led the conceptualization and methodology design of the study, and was responsible for drafting the original manuscript. Author 2 conducted the investigation, managed data curation, and contributed significantly to the review and editing of the manuscript. Author 3 performed the formal analysis, developed visualizations, and also participated in the manuscript's review and editing process. All authors have read and approved the final version of the manuscript

Conflicts of Interest

The authors declare no conflicts of interest

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request

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