Digital Transformation and Internationalization of SMEs: Digital Maturity as a Tool for Overcoming Institutional Barriers

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Abstract

This article examines how digital maturity can enhance the resilience of small and medium-sized enterprises (SMEs) within the dynamic institutional environment of emerging economies. Using in-depth interviews from two companies—a transportation business reliant on physical infrastructure and an online travel agency built around digital platforms—the study finds that enterprises dependent on capital-intensive assets face greater vulnerability to sanctions, banking restrictions, and logistical costs. In contrast, firms with robust digital infrastructure can swiftly adapt to regulatory changes and implement alternative payment solutions. The research highlights that adopting digital tools and flexible partnerships enables SMEs to reduce transaction costs and maintain international expansion despite institutional barriers.

Keywords*:* Internationalization, SMEs, Institutional Barriers, Emerging Economies, Digital Maturity

Introduction

Small and medium-sized enterprises (SMEs) are traditionally regarded as key drivers of economic growth, employment, and innovation, forming the competitive foundation of national economies [OECD, 2017]. The agility and ability of SMEs to swiftly adapt to changing market conditions enable them to discover new niches and expand their businesses even during periods of economic turbulence. However, when entering foreign markets, these enterprises face institutional barriers, often exacerbated in emerging economies by unstable regulatory frameworks, limited access to financing, and underdeveloped infrastructure [Peng, 2003; Meyer & Peng, 2005].

Contemporary digital transformation is altering traditional perspectives on how firms can compete globally and integrate into international value chains [Autio et al., 2000]. The emergence of "born global" companies and the proliferation of online platforms demonstrate that digital SMEs can rapidly penetrate new markets by leveraging intangible assets, cloud technologies, and data analytics tools [Knight & Cavusgil, 2004; Autio et al., 2014]. Conversely, traditional enterprises in industries requiring capital-intensive assets and complex logistics often encounter stricter institutional constraints and higher transaction costs, particularly if digital channels and online tools are only partially integrated into their business models [Zhu et al., 2006; Vendrell-Herrero et al., 2017].

Existing research highlights differences in internationalization strategies and speeds between digital companies and traditionally operated firms [Johanson & Vahlne, 1977; Oviatt & McDougall, 1994]. However, the question of how traditional SMEs can effectively integrate online platforms, data analytics, and other digital tools to overcome institutional barriers when entering foreign markets remains open. These research gaps are especially pronounced in emerging economies, where sanction regimes and regulatory environments rapidly evolve, and the willingness of banks and other financial institutions to service cross-border SME transactions remains unstable.

The relevance of this work lies in the need to identify key differences in international strategies between digital and traditional SMEs and to analyze how traditional enterprises can adopt or adapt digital solutions to reduce transaction costs, expedite market entry, and increase overall resilience to external shocks. The study addresses the following research questions:

RQ1: What differences exist in the internationalization strategies of digital SMEs compared to traditional enterprises reliant on physical infrastructure?

RQ2: How does the institutional environment influence digital and traditional SMEs in their international expansion processes?

To address these questions, this study employs qualitative methods based on semi-structured, in-depth interviews with representatives of two companies: one reliant on physical infrastructure (transportation business), and another focusing on online products and services (digital travel agency). Comparative case analysis highlights significant institutional constraints and approaches for overcoming them, generating theoretical and practical recommendations for SMEs aiming to internationalize their business in rapidly changing regulatory environments.

Literature Review

Definition and Importance of Small and Medium-sized Enterprises

Small and medium-sized enterprises (SMEs) are traditionally regarded as pillars of economic development, key drivers of employment creation, and innovation growth factors [OECD, 2017]. Despite the absence of a universally accepted definition of SMEs, their flexibility and capacity to swiftly respond to changing market conditions enhance economic resilience in both developed and developing countries. Global comparative studies highlight the significant contributions of SMEs to GDP, exports, and employment, making them central to national economic systems [Heim et al., 2019].

Definitions of SMEs vary depending on national economic, institutional, and regulatory contexts. For instance, India's classification is based on capital investments: micro-enterprises are companies with equipment investments up to 2.5 million Indian rupees [Kumar et al., 2017]. In Bangladesh, SMEs are defined by staff numbers (up to 100 employees), reflecting the country’s employment priorities [Azam, 2015]. Malaysia employs a comprehensive approach considering both employee numbers (5 to 75 employees for small enterprises) and annual turnover (300,000 to 5 million Malaysian ringgit) [Ibrahim et al., 2018].

Statistical data substantiate the key role of SMEs in economic development. In Bangladesh, SMEs account for about 45% of industrial value-added, nearly 80% of industrial employment, and up to 80% of export revenues [Azam, 2015]. Similarly, SMEs in Singapore generate 46% of GDP and provide 63% of employment, while in European countries, their share of total employment reaches 60–70%. In Japan, over 78% of employment is attributed to SMEs, and in Pakistan, they contribute around 40% of annual GDP, 25% of industrial exports, and 78% of individual employment [Pathan et al., 2017]. These indicators clearly illustrate the critical role of SMEs in economic diversification, enhancing living standards, and increasing national economic resilience.

Russian legislation also highlights SMEs as a distinct sector, considering employee numbers and annual revenues. According to Federal Law No. 209-FZ of July 24, 2007, and Government Decree No. 101 of February 9, 2013, Russian SMEs are enterprises with up to 250 employees and annual revenues not exceeding 1 billion rubles. This approach underscores the government's priority in fostering flexible and adaptive enterprises capable of generating new employment and contributing to regional development.

Despite differences in criteria and institutional contexts, the role of SMEs in the global economy remains consistently significant. Recently, global challenges associated with digital transformation have become particularly relevant, radically altering competitive conditions and accelerating the introduction of new technologies in international business. SMEs find themselves at the center of these transformations: their agility helps them quickly adapt to changing digital trends, while resource constraints complicate their full-scale international expansion. Subsequent sections will analyze how SMEs address these challenges within the context of digital transformation.

Digital Transformation of Small and Medium-sized Enterprises

In the contemporary economy, digital technologies function not merely as tools for automating individual operations but as critical elements of strategic development and transformation of business models [Kulikov & Bandurin, 2024]. Digital transformation implies a comprehensive shift to a new economic system centered around digital interactions among market participants, ranging from suppliers and distributors to end-users. Unlike simple digitization, which involves replacing analog processes with digital solutions [Morozov, 2024], comprehensive transformation affects organizational structures, corporate culture, personnel management methods, and entire value chains. Such fundamental shifts inevitably lead to the redesign of existing business processes, the introduction of analytical platforms, and the necessity for new competencies among managers and staff.

Traditional SMEs focus their operations in established industries requiring significant physical assets and complex logistical infrastructure [Johanson & Vahlne, 1977]. These firms are prominently represented in manufacturing, construction, agriculture, retail trade, and services. Their business models are based on producing and selling tangible goods, necessitating substantial investments in equipment, production facilities, warehouses, transportation, and logistics [Hitt et al., 1997]. Unlike digital companies, traditional enterprises are characterized by inertia in their strategies and relatively low flexibility in adapting to external environmental changes, including international market entry.

From a theoretical standpoint, internationalization peculiarities of traditional enterprises can be explained through the evolutionary Uppsala model [Johanson & Vahlne, 1977]. According to this model, firms gradually accumulate experience and resources necessary for international expansion, extending their geographic reach as uncertainty decreases and resource bases develop. For traditional firms, this path involves particularly high transaction and infrastructure costs because they cannot easily scale or switch markets without significant investments [Cassiman & Golovko, 2011].

Institutional theory emphasizes formal and informal rules shaping international market entry conditions [North, 1990; Meyer & Peng, 2005]. Traditional firms reliant on physical supply chains face greater difficulties adapting to diverse regulatory regimes, tariff, and non-tariff barriers compared to digital firms. These SMEs must invest in transportation infrastructure, warehousing, product certification, and local standards compliance, resulting in longer and costlier processes during market entry, thereby reducing their overall flexibility [Lavastre et al., 2014; Peng, 2003].

Theories of global value chains [Gereffi et al., 2005] and network approaches to internationalization [Johanson & Mattsson, 1988] highlight that integrating into international supplier and distributor networks requires substantial effort from traditional enterprises. They must establish partnerships, account for cultural differences and quality requirements, and invest in product localization and logistics. For traditional SMEs, the cost and complexity of such transformations often pose significant barriers to expanding international presence.

Digital transformation offers traditional SMEs opportunities to reduce transaction costs, enhance flexibility, decrease logistics management expenses, and improve transparency [Kulikov & Bandurin, 2024]. Digital SMEs—whose business models from inception utilize a wide array of contemporary digital technologies—experience accelerated digital transformation by fundamentally altering management and external interactions, facilitating rapid scaling and international expansion without significant dependence on physical infrastructure [Kulikov & Bandurin, 2024; Brynjolfsson & McAfee, 2014; Zhu, Kraemer & Xu, 2006].

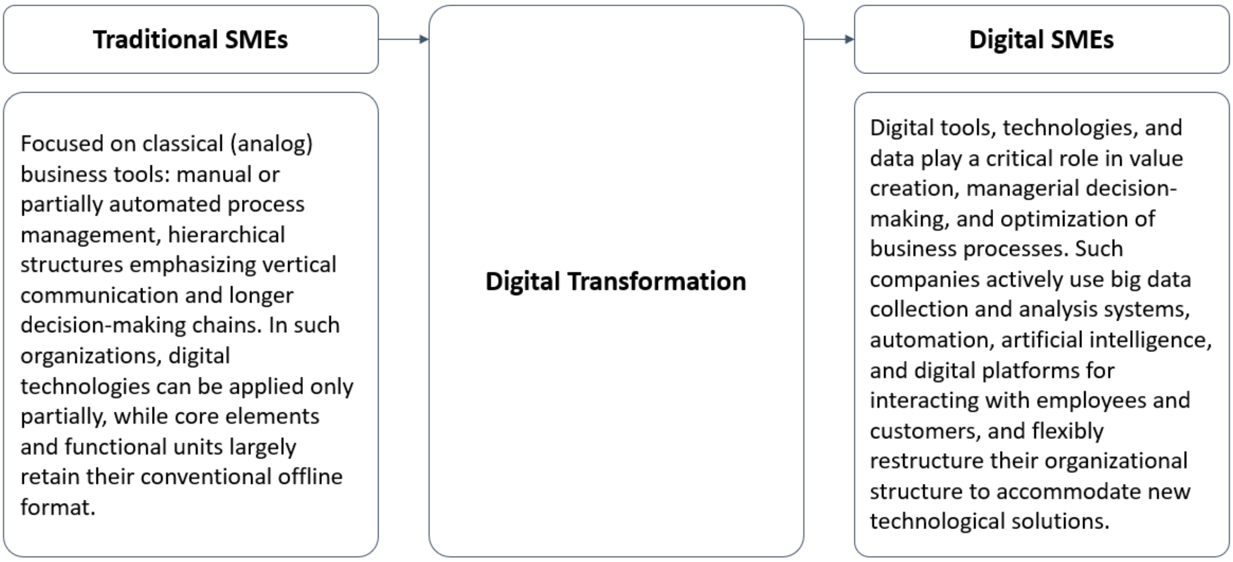
Table 1. Comparative Analysis of Digital and Traditional SMEs

Aspect	Digital Companies	Traditional Enterprises
Market Entry Approach	Rapid global market entry through the internet and online platforms	Gradual market entry starting with exports
Infrastructure Costs	Low costs due to the use of cloud technologies and online platforms	High costs associated with warehouses and distribution centers
Product Adaptation	Adaptation through big data analytics and artificial intelligence	Adaptation to requirements and standards of foreign markets
Marketing and Advertising	Digital marketing and advertising via social networks and online platforms	Traditional marketing and advertising focusing on product quality and brand reputation
Flexibility and Adaptability	High flexibility and rapid adaptation to changes in international markets	Limited flexibility, dependence on physical resources
Partnerships and Alliances	Use of online ecosystems and digital partnerships	Formation of partnerships with local companies and creation of joint ventures
Regulatory and Institutional Factors	Importance of intellectual property protection and cybersecurity regulations	Importance of trade barriers, tariffs, non-tariff barriers, and access to financing

Source: Compiled by the author based on literature review [Zhu, Kraemer & Xu, 2006; Johanson & Vahlne, 1977; Cassiman & Golovko, 2011; Johanson & Vahlne, 2009; Hitt, Hoskisson & Kim, 1997; Reuber & Fischer, 1997; Coviello & Munro, 1995; Johanson & Mattsson, 1988; North, 1990; Peng, 2003; Meyer & Peng, 2005].

Traditional SMEs, by integrating key elements of digital approaches, can enhance their opportunities for international expansion, increase resilience to external shocks, and reduce the time and financial costs associated with entering new markets. This theoretical proposition establishes the foundation for subsequent empirical analysis aimed at identifying optimal digital transformation strategies for traditional SMEs.

Figure 1. Theoretical Conceptual Model



Source: Compiled by the author based on the literature review [Kulikov & Bandurin, 2024]

Institutional Barriers to SME Internationalization: Challenges and Adaptation Strategies

The internationalization of small and medium-sized enterprises (SMEs) is closely linked to the institutional environment, defined by formal and informal norms, cultural traditions, and social practices [North, 1990; Peng, 2003; Meyer & Peng, 2005]. In emerging economies, such as Russia, heterogeneity in legislation, political instability, and dynamic regulatory frameworks complicate SMEs' entry into foreign markets [Shirokova & Tsukanova, 2012]. Institutional theory emphasizes critical factors like stability and effectiveness of law enforcement, directly affecting SMEs' ability to develop successful internationalization strategies, especially when resources are limited.

One of the most significant institutional barriers is economic sanctions, which restrict Russian SMEs' access to international financial markets, increase transaction costs, and undermine trust among foreign partners. Sanctions represent formal barriers, such as transaction bans, blocked international payment systems, and licensing regulations, directly hindering cross-border operations.

Traditional SMEs reliant on capital-intensive assets and physical infrastructure are particularly vulnerable to sanctions. Meanwhile, digital SMEs, though oriented towards online platforms and intangible assets, also encounter challenges like blocked payment systems and platforms. However, their flexible business models often enable quicker adoption of alternative solutions (e.g., local payment services or proprietary online platforms), partially mitigating the impact of sanctions.

Research Methodology

The objective of this study is to examine institutional barriers affecting the internationalization of traditional and digital SMEs, and identify differences in strategies employed to overcome these barriers. The theoretical foundation includes evolutionary internationalization models, the resource-based view, institutional theory, and concepts of dynamic capabilities and digital technologies' role in accelerating international market entry.

This qualitative study investigates SME internationalization in emerging economies characterized by complex interplay among formal and informal institutional rules, cultural norms, and regulatory requirements. Qualitative analysis provides insights into decision-making processes, strategic trade-offs, and barriers encountered during internationalization.

To highlight differences between traditional and digital SMEs, the study examines companies significantly differing in resource characteristics and business models: one traditional SME (manufacturing, construction, agriculture, logistics) and one digital SME (IT, fintech, e-commerce, digital marketing). Companies were selected via industry associations and personal networks to access top managers and international division heads experienced in foreign market entry decisions.

SMEs were selected according to criteria outlined in Russian Federal Law No. 209-FZ (July 24, 2007) and Government Decree No. 101 (February 9, 2013), defining SMEs as having up to 250 employees and annual revenues not exceeding 1 billion rubles. Companies were also required to have at least two years of operational experience, ensuring sufficient exposure to international environments and informed evaluation of internationalization strategies.

Data were collected through semi-structured, in-depth interviews with top managers or international division leaders. Interviews followed a pre-defined guide while remaining flexible for exploring details and uncovering hidden topics [Creswell & Poth, 2018]. Questions addressed foreign market entry experiences, perceptions of institutional barriers (regulatory constraints, financing access, data protection requirements, logistics), and strategies for overcoming these barriers.

Unlike traditional formal coding procedures [Strauss & Corbin, 1998], this study employed thematic comparisons [Guest, MacQueen & Namey, 2012] without extensive open/axial coding. Emphasis was on identifying common "pain points" and adaptation strategies. Instead of formal categorization, respondents' quotes were grouped according to predetermined themes (institutional barriers, digital tools, partnerships, sanctions).

The methodological approach focused on in-depth analysis of a specific context—an emerging economy (Russia)—limiting generalizability beyond these conditions [Eisenhardt, 1989]. Additionally, self-reported data introduce subjectivity risks [Podsakoff et al., 2003]. While qualitative methods cannot statistically verify causality, data depth and richness clarify the specifics of institutional barriers and digital transformation aspects.

Results

During the internationalization of small and medium-sized enterprises (SMEs) in emerging economies, numerous institutional barriers can significantly influence their success in international markets. This study compares traditional and digital SMEs regarding how they overcome these barriers. To achieve this, in-depth interviews were conducted with representatives from two Russian companies: a traditional transportation company and a digital online travel agency.

The traditional transportation company, established in 2019 as a family business in Russia, specializes in transportation services and related sectors. Its primary business areas include freight transportation, vehicle repair and maintenance, and a fuel business operating a network of gas stations. The company also developed a taxi service in partnership with taxi platforms.

In 2022, the company sought to expand into Kazakhstan to import vehicles and auto parts into Russia, driven by rising domestic prices and a need to diversify supply chains amidst geopolitical instability.

“We decided we needed to work with neighboring countries: open a company, secure residency equivalents, and purchase vehicles at lower prices… It was an attempt at diversification to avoid relying solely on the Russian market.” (Representative, Transportation Company)

The company established a limited liability partnership (LLP) in Kazakhstan, opened bank accounts, and began negotiating with local car dealerships to import vehicles into Russia for fleet renewal and expansion.

“We had an agreement with a dealership to purchase cars. Initially, we tested one payment, the bank in Kazakhstan halted the transaction due to compliance requirements related to international sanctions.” (Representative, Transportation Company)

Facing significant institutional barriers, including banking transaction issues, sanction concerns from banks, and regulatory restrictions on vehicle exports, the company failed to realize its plans. Consequently, the Kazakhstan operation was closed in August 2024 after two years, and the company refocused on developing its domestic Russian business.

The digital company is an online travel agency specializing in comprehensive travel arrangements. Founded three years ago, it offers a full range of tourist services, including visa support, airline ticket bookings, hotel reservations, and event organization. Its main product comprises individual and group tours, including hiking and adventure trips.

"We operate entirely online, managing bookings, visas, and comprehensive trip arrangements. Clients appreciate being able to handle everything remotely." (Representative, travel agency)

In its second year, the company initiated internationalization, entering the Czech market, establishing a branch, and forming local partnerships. It also expanded into Moldova and plans further expansion into other CIS and European countries.

"In the Czech Republic, we have our representative who understands local realities. Concurrently, we entered Moldova and plan further expansion." (Representative, travel agency)

Operating primarily digitally allows the company to easily scale and adapt to new markets. In the Czech Republic and Moldova, the company provides services via online platforms, using English for broad audience communication, occasionally adapting marketing materials to local languages.

"For the Czech Republic, we have a Czech website version, but primary communication remains in English, simplifying processes." (Representative, travel agency)

To overcome institutional barriers, the company actively employs digital technologies and innovations, such as AI-powered chatbots for enhanced customer service. It builds local partnerships and adapts services to cultural specifics.

"We use AI in chatbots to promptly respond to customer queries internationally… It helps us save resources and remain flexible." (Representative, travel agency)

The company successfully operates internationally, continually expanding its geographical presence, with plans to develop a proprietary mobile application, integrate AI further into business processes, and grow operations in other European and CIS countries.

"Next year, we plan to launch our own app featuring tours, bookings, and AI support. We aim to enter ten countries within the next five years." (Representative, travel agency)

The institutional barriers encountered by the traditional transportation company and the digital travel agency differ significantly in nature and impact on their international outcomes. For the transportation company, major challenges involved financial instruments and sanction risks. Banks in Kazakhstan refused transactions, fearing secondary sanctions, accompanied by changes in export-import regulations, severely complicating planning. Reliance on physical logistics made any disruptions in customs regulations or logistics highly costly. The absence of digital solutions exacerbated these difficulties.

Conversely, the digital travel agency faced challenges primarily related to information security and data protection regulations. Sanctions manifested as restrictions on international platforms or payment systems, prompting a shift to alternative solutions or local providers. The company’s high digital maturity enabled quick adaptations to alternative channels, smoothing regulatory issues related to licensing and local requirements.

Thus, institutional barriers significantly depend on industry specifics and enterprises' digital maturity levels. The transportation company scarcely utilized online services and digital solutions, leading to limited strategic partnerships and inability to develop flexible international payment and supply schemes. In contrast, the digital travel agency strategically invested in IT infrastructure, swiftly replacing blocked payment systems, complying with data protection norms, and developing localized customer applications.

Local adaptation proved crucial. The transportation company's neglect of collaboration with Kazakhstani experts and businesses intensified regulatory risks, ultimately causing project termination. The digital travel agency, aiming to establish a presence in the Czech Republic and Moldova, built partnerships with local enterprises and rapidly localized service interfaces, minimizing cultural and linguistic barriers and strengthening consumer trust.

The experiences of these two companies highlight that institutional barriers to SME internationalization extend beyond sanctions and financial restrictions. Crucial factors include dynamically changing regulations, local legislative adaptation requirements, varying cybersecurity and data protection standards, and entrepreneurs' capacity to establish effective partnerships. Digitally mature enterprises are better equipped to swiftly react to external changes and maintain international activities. Traditional businesses, reliant on physical infrastructure and paper-based procedures, are more vulnerable, especially to rapid sanctions policy changes or customs control shifts. A detailed comparative analysis is presented in Appendix 1.

Discussion

The study's findings indicate that traditional companies reliant on physical infrastructure and capital-intensive assets are significantly more vulnerable to sanctions and financial restrictions than digital enterprises originally embedded within the online environment. This aligns with evolutionary internationalization models [Johanson & Vahlne, 1977] and the resource-based theory [Barney, 1991], emphasizing that SMEs lacking flexible digital tools face greater challenges in international market entry and slower adaptation to external shocks. When a bank in the host country blocks payments due to secondary sanctions fears, traditional companies without developed online infrastructure struggle to find alternative solutions, and changing export rules further complicate matters. As the transportation firm's representative stated, “When the bank simply refuses to process a payment, everything stalls… No matter how often we traveled there, nothing worked without digital solutions.”

Proposition 1: Traditional SMEs that do not integrate digital tools (online platforms, alternative payment systems, CRM, etc.) into their business processes are more vulnerable to financial and regulatory barriers, potentially abandoning internationalization under sanctions pressure.

The digital travel agency case demonstrates rapid adaptation through online platforms, analytics services, and AI-driven chatbots. Such flexibility grants access to diverse payment systems and quick adjustments to local legislation without significant internal restructuring. This experience corresponds to the "born global" concept and dynamic capabilities theory [Oviatt & McDougall, 1994; Teece et al., 1997; Autio et al., 2014], highlighting digital companies' swift market entry due to lower transaction costs and networked partnerships. As the travel agency's representative noted, “We quickly found local partners in the Czech Republic and Moldova, translated interfaces into English, and potentially local languages, aiming to reach more customers.”

Proposition 2: Digital SMEs adapt more rapidly to institutional barriers (sanctions, licensing, and cybersecurity requirements) than traditional firms.

Comparing the cases refines previous literature observations regarding digital strategies' impact on overcoming institutional barriers [Vendrell-Herrero et al., 2017]. Traditional firms neglecting online services forfeit potential benefits that could mitigate financial and logistical constraints. According to the transportation firm's representative, even partial digitization of supply chains and payment procedures could have reduced transaction costs and saved their project: “We didn't use any online tools… Digitalization might have simplified things… But we handled everything manually.”

Proposition 3: Combining traditional offline resources (physical infrastructure, local partnerships) with targeted digital solutions (virtual sales channels, advanced analytics) enhances SMEs' chances for successful internationalization in unstable institutional environments.

Moreover, the experiences of both companies underline the importance of local adaptation and engaging consultants in host countries. The transportation firm overlooked opportunities to collaborate with Kazakh specialists, leading to an underestimation of local regulatory risks and formal procedures. Conversely, the digital travel agency recognized the specifics of the Czech and Moldovan markets from the start, building local partnerships, translating interfaces, and swiftly responding to licensing requirements.

Proposition 4: Engaging local consultants and partners in the host country mitigates institutional barriers, enabling SMEs to interpret regulatory requirements accurately, find alternative financing schemes, and reduce payment refusal risks from banks.

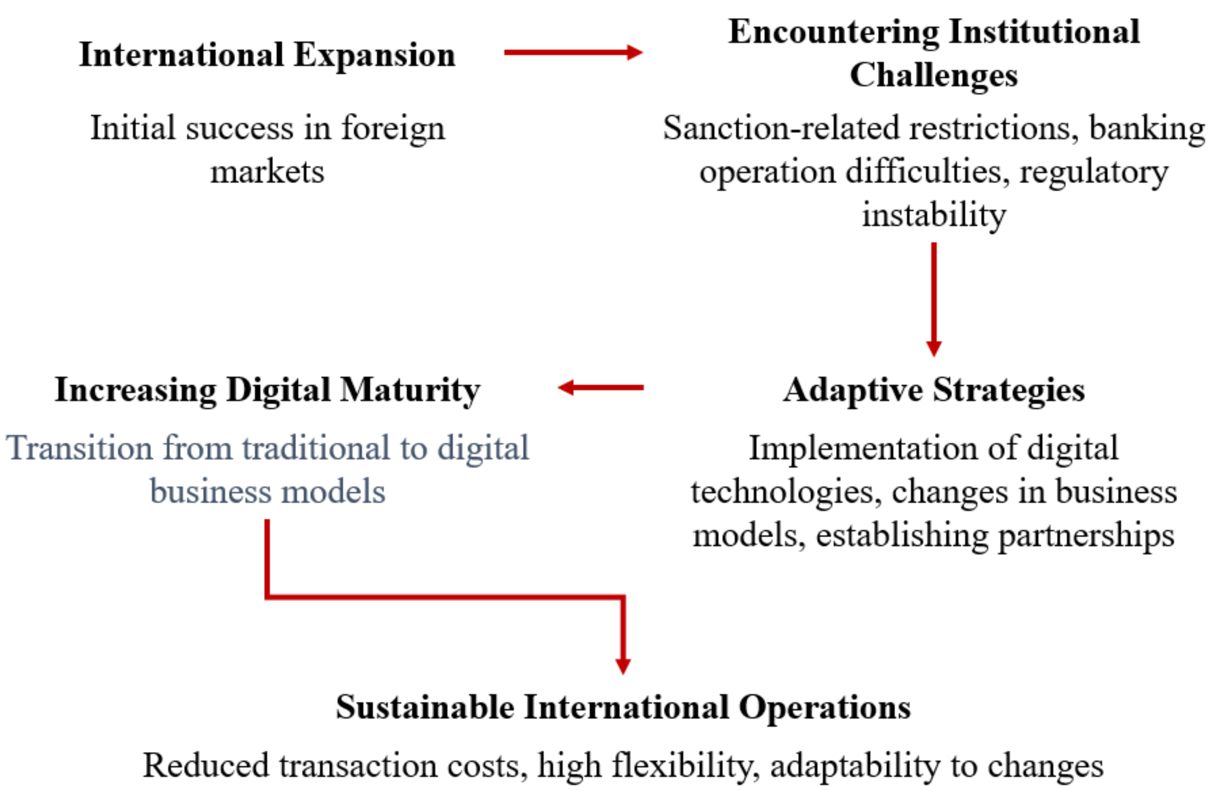
For the digital travel agency, comprehensive digital transformation is viewed not merely as a trend but as a strategic platform for further internationalization. AI-based chatbot development and proprietary applications accelerate client communication and enhance mobility in establishing international branches. This approach aligns with the dynamic capabilities framework [Teece et al., 1997], emphasizing technological preparedness and the willingness to adjust business models to capitalize on emerging market opportunities.

Proposition 5: Systematic digital transformation is a long-term strategic investment, increasing SMEs' resilience to external shocks (sanctions, currency fluctuations, evolving regulations) and simplifying repeated entry into new international markets.

Considering companies initially enter foreign markets before encountering institutional challenges, the proposed model (Figure 2) illustrates a dynamic process where initial international expansion triggers new barriers, requiring adaptive strategies and greater digital maturity. Thus, the business model and digitalization level become tools for adaptation and overcoming institutional challenges arising after internationalization.

In this model, international expansion serves as a starting point, after which companies encounter institutional challenges. These challenges stimulate adaptive strategies that promote company digitalization. Initially offline-oriented traditional SMEs evolve into digital enterprises through digital solutions implementation. This dynamic process not only addresses barriers but also ensures sustainable international market operations.

Figure 2: Model for Enhancing SME Resilience in Foreign Markets



Source: Completed by the author

Thus, successful internationalization depends on a company's ability to adapt to institutional challenges through gradual digital transformation, where the business model defines the starting point, and adaptive strategies serve as mechanisms for enhancing digital maturity and resilience amid global instability.

Conclusion

The study's findings affirm that digital and traditional SMEs exhibit fundamentally different internationalization logics driven by their resource bases, business models, and online engagement levels. Digital SMEs, relying initially on intangible assets, online platforms, and analytical solutions, demonstrate significantly greater flexibility and dynamism compared to traditional organizations with physical infrastructure. Digital firms quickly reconfigure value chains, identify alternative customer interaction channels, and leverage online ecosystems for international market entry, overcoming unstable institutional environments more effectively by minimizing transaction costs. Traditional SMEs, constrained by physical infrastructure and capital-intensive assets, face stringent regulatory and logistical barriers, requiring evolutionary, sequential market expansion with high adjustment costs.

Digital maturity directly influences SMEs' sensitivity to sanctions, financial restrictions, legislative changes, and other institutional barriers in host countries. The online travel agency's experience highlights rapid adaptation to regulatory requirements, payment system flexibility, and extensive online partnerships, ensuring resilience even amidst adverse sanctions. Conversely, the transportation company, dependent on physical supply chains and limited banking instruments, faces severe disruptions from account freezes or import bans, risking operational cessation and halted expansion. Thus, digital maturity emerges as a critical tool for overcoming institutional barriers through alternative financial and logistical solutions, business process reconfiguration, and cultural adaptation.

Practically, traditional SMEs aiming to enter international markets may partially adopt digital mechanisms to lower transaction costs, swiftly respond to regulatory shifts, and shorten adaptation periods. Integrating analytics platforms, AI customer service systems, multilingual chatbots, and online logistics partnerships boosts resilience, potentially fostering broader digital transformation. Therefore, digital maturity provides tactical and strategic solutions, enhancing global competitiveness.

However, limitations include a narrow Russian context and few cases, limiting statistical generalization. Future studies should broaden geographic and sectoral analyses and employ mixed methods for validating identified patterns and refining theoretical models.

Ultimately, SME "digital maturity" serves as a crucial factor in mitigating institutional constraints during international market entry, providing foundational adaptability through flexible online infrastructure, digital ecosystems, and big data analytics, essential for navigating global instability and unpredictable sanctions environments.

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APPENDIX

Appendix 1. Comparative Analysis of Companies

Factor	Traditional Transportation Company	Digital Online Travel Agency
Industry and Activities	Transportation services: bus transportation, vehicle repair, fuel business, taxi service.	Online travel agency: comprehensive travel arrangements, including visa support, ticket booking, hotels, and event organization.
International Activities	Attempted entry into Kazakhstan market to import vehicles and auto parts to Russia.	Successfully entered international markets: Czech Republic, Moldova; plans further expansion into other CIS and European countries.
Internationalization Goals	Reducing costs of purchasing vehicles and parts; diversifying supply amidst geopolitical instability.	Expanding customer base, increasing profitability, scaling the business.
Institutional Barriers	- Difficulties opening bank accounts in Kazakhstan. - Bank refusals to process payments due to sanction risks. - Unpredictable policy changes in Kazakhstan.	- Cybersecurity and data protection requirements (GDPR). - Challenges obtaining tourism service licenses.

	- Logistical and customs issues. - Lack of digitalization in processes.	- Sanction-related restrictions on digital platforms and payment systems. - Need for adaptation to local regulatory requirements.
Barrier Overcoming Strategies	- Negotiated with multiple banks and car dealerships. - Considered physical presence to resolve issues. - Did not use digital technologies or partnerships.	- Established partnerships with local companies and representatives - Used alternative digital platforms. - Implemented innovations (AI, chatbots). - Adapted marketing campaigns in English and local languages.
Use of Digital Technologies	- Minimal; business model based on physical processes. - Did not digitalize supply chains or utilize online tools.	- Complete digitalization of business model. - Active use of online platforms, artificial intelligence, chatbots. - Plans to develop proprietary mobile application.
Flexibility and Adaptability	- Limited flexibility due to dependence on physical processes and infrastructure. - Quick reactions to changes but lacking strategic planning. - Limited resources and domestic market focus.	- High flexibility due to small size and digital business nature. - Ability to rapidly adapt to international market changes. - Active use of data analytics for decision-making.
Cultural and Linguistic Barriers	- No significant cultural or linguistic barriers when working with Kazakhstan. - Did not engage local experts.	- Overcome barriers via partnerships with local representatives. - Uses English language for broad audience. - Adapts marketing to local languages as necessary.
Role of Partnerships	- Did not utilize partnerships or cooperation with local companies to overcome barriers.	- Actively establishes partnerships with local companies and experts. - Partnerships facilitate adaptation to local markets and regulations.
Government Support	- Did not utilize government support programs domestically or abroad. - Did not engage consultants or experts.	- Plans to explore opportunities for government support abroad. - Acknowledges the importance of understanding local legislation.

Overcoming Institutional Barriers	- Failed to overcome barriers; ultimately closed operations in Kazakhstan. - Lack of digitalization and partnerships limited options.	- Successfully overcomes barriers through flexibility, innovation, and digital technologies. - Continues international market expansion.
Future Plans	- Focused on domestic Russian business development. - No immediate internationalization plans.	- Development of proprietary mobile application. - Further integration of artificial intelligence. - Expansion into other European countries and the CIS. - Aims to enter ten countries within five years.
Key Success Factors	- Globalization of financial institutions could help overcome barriers. - Digitalization of customs and logistics processes needed to facilitate operations.	- Innovation and implementation of new technologies. - Partnerships and localization of products and services. - Effective online marketing and data analytics.
Use of Innovations	- Did not implement innovations or digital strategies. - Relied on traditional business methods.	- Actively implements innovations, including artificial intelligence and chatbots. - Develops new digital products and services.
Difficulties and Challenges	- High level of institutional barriers related to finance and regulatory restrictions. - Lack of digitalization complicated barrier overcoming.	- Strict cybersecurity and data protection requirements. - Need for licensing and compliance with local regulations. - Competition on digital platforms.
Level of Internationalization Success	- Unsuccessful internationalization; operations in Kazakhstan closed.	- Successful internationalization; operating in multiple international markets and continuing expansion.

Source: Completed by the author