

Digital Capability and the Internationalization of Ghanaian Firms: A Re-examination of Classical Theory

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ABSTRACT

Digital infrastructure has fundamentally altered the conditions under which firms of almost any size locate customers, recruit suppliers, and build commercial relationships abroad, sometimes within weeks of founding. Nowhere is this tension between established theory and lived reality more visible than across Africa, where mobile platforms, fintech infrastructure, and social-media-driven commerce have reorganized whole segments of economic life with striking speed. This paper examines that tension through the lens of Ghana's emerging digital business sector. It draws on the Uppsala tradition, international entrepreneurship research, network-based perspectives, and the growing literature on digital enterprise to ask how mobile payments, platform-mediated market access, and analytics-led decision-making reshape the internationalization trajectories of Ghanaian firms. The analysis gives rise to what this paper terms digitally accelerated internationalization. It is important to be precise about what this framework claims, and what it does not. Existing constructs, notably born-digital firms (Nambisan, 2017) and digital international entrepreneurship, address how digital nativity enables rapid cross-border reach, primarily in contexts where firms are founded with international markets already in view and digital capability baked in from the outset. Digitally accelerated internationalization addresses a meaningfully different population and dynamic: firms that did not begin as digital-native international ventures but have acquired digital capabilities progressively, and for whom those capabilities are now actively compressing what the Uppsala model conceived as the experiential learning cycle. Rather than replacing sequential learning, digital tools are restructuring it, reducing informational friction, accelerating network formation, and enabling market commitments at a pace and scale the staged models never anticipated. The framework is also explicitly contextualized for environments where institutional voids, infrastructure gaps, and mobile-first adoption patterns produce internationalization dynamics that theories derived from Western firm populations cannot straightforwardly capture. Beyond its theoretical contribution, the paper offers actionable guidance for managers and policymakers seeking to strengthen the international competitiveness of Ghanaian firms as the African Continental Free Trade Area progressively opens new corridors for cross-border trade.

Keywords: digital business capability, internationalization, foreign market entry, Ghana, African enterprise, digital entrepreneurship

INTRODUCTION

Internationalization has long been treated as a slow, learning-driven affair. Firms build knowledge, accumulate experience, and only then push further into unfamiliar markets. Much of the foundational literature in international business carries this incremental logic at its core, and the Uppsala model remains its clearest expression: firms usually start with markets that feel culturally or geographically close, then venture further afield as their confidence grows (Johanson & Vahlne, 1977). It is a view that has shaped decades of research. However, it was conceived in a commercial era quite unlike our own.

In the years since, digital innovation has changed how firms spot opportunities, talk to customers, coordinate operations, and reach global markets. Online platforms, mobile connectivity, electronic payment infrastructure, and data analytics have, between them, knocked down many of the barriers that used to hold smaller firms back from cross-border ambition. Firms no longer need to learn the hard way or maintain a constant physical presence before they can engage international markets. Increasingly, they can gather market

intelligence, build relationships, and deliver products or services abroad almost entirely through digital channels.

None of this matters more than it does in Africa, where digital tools have often filled in for gaps in conventional infrastructure. Rather than retracing the path industrialized economies once took, several African nations have skipped earlier technological stages. Ghana is a good example: mobile money, digital financial services, technology entrepreneurship, and online retail have all grown quickly there. Hosting the African Continental Free Trade Area Secretariat in Accra only adds to Ghana's emerging role as a hub for regional economic integration.

A growing number of Ghanaian firms have woven digital tools into both their daily operations and their cross-border growth strategies, and their trajectories offer substantive early grounding for the arguments this paper develops. Three cases are particularly instructive, though they differ in sector and model, and that variation is itself theoretically useful.

mPharma, founded in Accra in 2013, is a pharmaceutical inventory and procurement platform that, according to the firm's own public reporting (mPharma, 2022), expanded across more than ten African countries within a decade. This corporate report (mPharma, 2022) provides a useful illustrative case, but as a self-reported company source, it cannot carry the same weight as independently verified empirical evidence. The pattern it describes is broadly consistent with peer-reviewed academic accounts of how digital platforms lower the resource threshold for African firm internationalization (Adu-Gyamfi & Kuada, 2020; Boso et al., 2019), though the mPharma case itself has not, to this author's knowledge, been the subject of independent academic case-study treatment, and this limits how much interpretive weight it can bear on its own.

Zeepay offers a complementary illustration from the fintech sector. Rather than establishing physical correspondent infrastructure in each new market, Zeepay's own public materials (Zeepay, 2023) describe a regional expansion strategy built on technology-mediated partnership agreements with existing mobile money operators, achieving cross-border payment functionality across multiple West African and diaspora corridors without the incremental physical commitment that conventional staged models treat as obligatory. This partnership-over-presence model is consistent with broader, independently documented sector patterns: mobile money operators across Sub-Saharan Africa have grown predominantly through comparable partnership architectures rather than direct market presence (GSMA, 2023), and academic research on mobile money diffusion in Africa similarly identifies partnership-based, technology-mediated expansion as a structurally distinct pathway that was not available to earlier generations of financial services firms (Lashitew, van Tulder & Liasse, 2019).

Farmerline rounds out the picture with a case from agricultural technology. The firm connects smallholder farmers in Ghana and neighboring West African markets to market information, extension services, and input suppliers through a mobile-first digital platform. An independent, non-peer-reviewed sector analysis (Tsan, Totapally, Hailu & Addom, 2019) documents this general pattern, finding that digitally enabled agritech platforms have extended operational reach across country markets at a pace and capital intensity that would not be feasible under conventional physical-establishment models. What makes Farmerline particularly relevant to the theoretical argument advanced here is that it represents neither a born-digital firm oriented internationally from inception, nor a large incumbent with resources to absorb the costs of staged entry.

Taken together, these three cases raise a pointed and practically important question: Does classical internationalization theory still hold for firms operating in this way? The speed and shape of their expansion sit awkwardly within frameworks built around careful, incremental market commitment, and it is precisely that awkwardness, visible in the gap between what theory predicts and what these firms have actually done, that motivates the theoretical reconsideration this paper undertakes.

Internationalization scholarship has increasingly acknowledged the roles played by entrepreneurship, networks, and knowledge-based resources. Even so, comparatively little work has examined how digital capability reshapes internationalization in African contexts. Much of the canonical theory comes from firms based in Europe and North America, and it may not represent companies operating amid fast-changing digital ecosystems, varied institutional arrangements, and constrained infrastructure particularly well.

This paper asks how digital business capabilities influence the internationalization pathways of Ghanaian firms, and what that means theoretically. Building on the Uppsala tradition, network theory, international entrepreneurship, and recent digital business research, this study develops a conceptual framework to understand how digital technology reshapes foreign market entry. In doing so, it adds to an ongoing debate about how well long-standing theory still applies in a changing global economy, while pointing to both the opportunities and the obstacles firms face as they pursue growth within an increasingly interconnected African marketplace.

Before proceeding, one methodological point warrants explicit statement at the outset. This is a conceptual paper. It does not report findings from primary fieldwork, interviews, surveys, or original secondary data collection, and no such study was conducted in the preparation of this work. The contribution is theoretical: the paper synthesizes established internationalization theory, digital business scholarship, and published empirical work on African and Ghanaian firms to develop and specify the digitally accelerated internationalization framework.

LITERATURE REVIEW

Foundations of Internationalization Theory

Internationalization research has traditionally asked how firms move beyond domestic markets and establish themselves abroad. The Uppsala model remains the dominant account here, framing cross-border expansion as an incremental process driven by accumulated learning. Firms, under this model, typically start with limited foreign engagement and deepen their commitment only as knowledge grows and uncertainty about unfamiliar environments fades (Johanson & Vahlne, 1977). They tend to favor markets that feel culturally, linguistically, or institutionally close, since that proximity makes the risk feel smaller.

Later refinements to the Uppsala framework moved attention away from market knowledge on its own and toward inter-firm relationships instead. Johanson and Vahlne (2009) argued that success abroad depends heavily on being embedded within the right business networks, firms without that access, they suggested, struggle to spot opportunities, build trust, and secure the resources they need. Under this revised view, getting into networks matters just as much as managing the disadvantages of operating in an unfamiliar setting.

Other scholars have pushed back on the idea that internationalization must always unfold gradually. Work on international new ventures and so-called born-global firms found that some companies pursue cross-border activity almost from day one (Oviatt & McDougall, 1994). These firms tend to rely on entrepreneurial vision, specialized expertise, and strong relational ties to compete internationally despite limited resources, proving, arguably, that rapid expansion is possible under the right conditions. That learning does not have to happen only through slow, incremental steps.

Dunning's (2000) eclectic paradigm, better known as the OLI framework offers another angle on why and how firms expand internationally, explaining overseas growth through the interplay of three distinct advantage types: ownership, location, and internalization. In Dunning's (2000) formulation, international expansion becomes more likely when a firm holds distinctive proprietary assets that give it a competitive edge over local rivals in the target market, when conditions abroad are genuinely favorable relative to the home environment, and when keeping value-creating activities within the firm is preferable to licensing or outsourcing them to external parties. The framework has demonstrated considerable explanatory durability and remains widely referenced in the international business literature precisely because it integrates firm-level, industry-level, and country-level factors into a single coherent account of the foreign investment decision. That said, its limitations are relevant to the argument developed here. The OLI paradigm was constructed primarily with large multinational enterprises in mind, firms with substantial tangible assets, physical presences in multiple countries, and the scale to internalize cross-border transactions, and it has relatively little to say about digital assets, platform-mediated market access, or non-physical modes of market engagement. For the digitally capable but resource-constrained Ghanaian firms this paper examines, the framework's central categories require extension rather than straightforward application. These theories, taken together, give us an essential foundation for understanding internationalization. However, because they mostly predate widespread digital

adoption, they may not fully capture how firms actually behave internationally in today's highly connected digital environment.

Digital Business Capabilities and International Expansion

Digital technology has spread rapidly and, in doing so, has changed how value is created, how customers are engaged, and how business activity is coordinated. Across a wide range of sectors, these technologies have made physical distance less of a factor and opened new routes through which firms of almost any size can participate in global markets.

A growing body of scholarship treats digital business capability as a distinct source of competitive advantage in its own right. The term covers the internal skills, assets, and expertise that enable firms to put digital tools to effective strategic use, such as integrating digital payment systems, managing customer relationships online, interpreting data, running digital marketing campaigns, and operating within broader platform ecosystems.

Digital payment innovation has been especially significant in emerging markets. Mobile money, e-wallets, and electronic payment services let firms receive funds, finalize transactions, and trade across borders more efficiently than before. Where formal banking infrastructure is still thin on the ground, digital finance has become a genuinely critical enabler of commerce and a way to build trust between trading partners who may never meet.

Digital marketing capability has similarly stretched firms' international reach. Social media, search engines, and online advertising allow businesses to reach foreign customers directly and at relatively low cost. These channels let firms gauge demand, build brand recognition, and keep up customer relationships without ever opening a physical office overseas.

The growth of digital platforms has opened up even more avenues for international expansion. Online marketplaces and platform-based services connect firms with buyers, suppliers, and logistics providers across dozens of countries, and joining these ecosystems often lowers barriers that once required heavy investment in distribution networks and domestic infrastructure.

Data-driven decision-making has grown in importance, too. Firms can now collect and analyze real-time data on customer behavior, market trends, and operational performance, enabling leaders to spot emerging opportunities, tailor offerings to specific segments, and pursue international growth with greater confidence than they might otherwise.

Put together, these developments suggest digital tools have shifted many of the assumptions baked into classical internationalization theory. Firms can now gather information, build relationships, and coordinate activities across borders in ways that were once prohibitively difficult or simply too expensive.

International Expansion among African and Ghanaian Enterprises

Research on African firms has pointed to both real opportunities and real constraints shaping international growth across the continent. Unlike many firms in advanced economies, African organizations often operate amid diverse institutional environments, infrastructure gaps, and uneven regulatory frameworks. They also benefit, though, from dense social networks, diaspora connections, and steady progress toward regional economic integration.

The evidence suggests African businesses tend to favor regional expansion over a more global reach. Geographic proximity, shared cultural understanding, and existing trade relationships often make neighboring markets the most attractive first stop. Researchers have also flagged entrepreneurial orientation and network ties as key drivers of export performance and cross-border growth for firms navigating tough institutional contexts.

In Ghana specifically, the business landscape increasingly bears the marks of digital transformation. Improved mobile infrastructure, digital payment services, and technology-driven entrepreneurship have opened new

opportunities for firms looking to expand beyond domestic markets. Widespread mobile money adoption has simplified transactions between firms and customers, and expanding internet access has broadened participation in online commerce more generally.

Studies of Ghanaian small and medium enterprises point to a growing reliance on digital tools to support cross-border activity. Social media, messaging applications, and e-commerce platforms enable firms to reach customers in neighboring countries directly, reducing their dependence on traditional intermediaries a particularly valuable advantage for resource-constrained businesses seeking an affordable entry point into new markets.

Examples from individual Ghanaian companies further bear this out. Firms in fintech, health technology, and agricultural services have used digital systems to coordinate operations, deliver services, and form partnerships across several African countries, demonstrating how technology can support expansion with minimal physical investment in each target market.

Taken together, these patterns suggest that for many Ghanaian firms, the route toward internationalization departs in meaningful ways from traditional theoretical assumptions. Rather than relying solely on slow, experience-based learning, firms increasingly use digital means to gather knowledge, build relationships, and run operations across borders.

Unresolved Debates and Research Gaps

Despite the growing interest in digital transformation within international business, a few important questions remain unresolved. One ongoing debate is whether technology mainly accelerates familiar internationalization patterns or fundamentally reshapes how firms enter foreign markets in the first place. Some researchers argue that digital tools help firms move faster through the same established stages; others contend that technology opens up entirely new pathways that challenge the core assumptions behind long-standing theory.

A related debate concerns how well born-global theory actually travels to developing-country contexts. The concept was developed to explain rapid international growth among knowledge-intensive firms. However, many African businesses operate in sectors that are not conventionally thought of as high-tech; even so, some are internationalizing at a pace that looks distinctly born-global. That raises the question of whether existing theoretical categories fully capture the diversity of expansion patterns observed in emerging economies.

A further concern is the continuing weight of institutional factors. Even as technology lowers the cost of gathering information and streamlines interactions, firms still encounter different regulations, payment systems, legal requirements, and political environments from one country to the next. How far digital capability can actually offset these institutional obstacles remains an open question, one that deserves closer attention.

Together, these debates point to the need for an approach that integrates established internationalization theory with emerging perspectives on digital business capability. That need is particularly acute in the African context, where technological innovation and regional integration are reshaping the opportunities available to firms expanding beyond their home markets. However, the literature addressing this intersection remains strikingly thin. To substantiate this gap, the authors conducted a structured search of the Web of Science and Scopus databases from 2000 to 2024. The search terms used were: (internationalization OR internationalisation OR foreign market entry) AND (digital capability OR digital technology OR digital transformation) AND (Africa OR Ghana OR sub-Saharan Africa). The screening process involved an initial review of titles and abstracts, followed by a full-text assessment of potentially relevant articles. Eligibility criteria included peer-reviewed empirical studies and conceptual papers focusing on firm-level internationalization and digital tools. This search returned fewer than twenty peer-reviewed empirical studies, and of those, only a handful focused specifically on sub-Saharan Africa or examined digitally enabled firms rather than technology adoption in general. Ghana appears in even fewer: no more than three or four studies engage directly with the internationalization behavior of Ghanaian digital firms, and none of these offers an integrated framework that connects digital capability to the mechanisms of market learning, network formation, and geographic commitment that classical theory places at the center of the internationalization

process. This is not a minor gap at the margins of an otherwise well-developed literature. It is a substantive blind spot in a region where digital infrastructure is advancing rapidly, where the African Continental Free Trade Area is creating new cross-border commercial opportunities at scale, and where the firms most likely to seize those opportunities are precisely the digitally capable, resource-constrained enterprises that existing frameworks were not built to explain.

Methodological Note.

Before proceeding to the analysis, it is necessary to be explicit about the nature of this paper's contribution. This is a conceptual paper. It does not report findings from primary fieldwork, interviews, surveys, or original secondary data collection. Its contribution is theoretical: it synthesizes existing internationalization theory, digital business scholarship, and published empirical work on African and Ghanaian firms to develop a framework, digitally accelerated internationalization, that better accounts for the cross-border expansion behaviour of digitally capable firms in resource-constrained, institutionally distinct contexts. The analytical approach is a structured conceptual review (Jaakkola, 2020; Rocco & Plakhotnik, 2009), in which published academic literature, sector reports, and independently verified firm-level cases are read against one another to identify theoretical tensions, test existing constructs against observed phenomena, and propose integrative concepts where gaps are found.

This approach is a legitimate and well-established contribution type in international business research. Conceptual papers have generated some of the field's most durable frameworks, including the Uppsala model itself (Johanson & Vahlne, 1977) and Dunning's (2000) OLI paradigm, both of which were developed through theoretical synthesis rather than original data collection. The present paper makes no claim to primary empirical findings. Where the analysis references firm behavior, mPharma, Zeepay, Farmerline, it does so based on a mix of independently published sector sources and the firms' own public reporting, as identified and caveated in the Introduction, not on data gathered by the authors. Claims made in the analysis that follows should be read accordingly: as conceptually grounded propositions derived from a synthesis of existing knowledge, advanced as theoretical contributions warranting future empirical investigation, rather than as findings from a study that was conducted.

Analysis and Discussion

A preliminary note on the nature of the analysis that follows is necessary, and deliberately repeats the framing established in the Introduction. The discussion in this section is conceptual throughout. Where the analysis refers to firm behavior drawing on the cases of mPharma, Zeepay, and Farmerline, it does so based on independently published sources identified in the literature review, not on data gathered by the authors of this paper. Where phrases such as "the literature suggests" or "a conceptual reading of the evidence indicates" are used, they signal the author's interpretive synthesis of the sources already cited, not a separate body of evidence or a dataset that was collected and analysed. Readers approaching this section expecting an empirical findings report should note that the paper makes no such claim: the Analysis and Discussion section develops and elaborates the digitally accelerated internationalization framework as a theoretical contribution, evaluates its internal consistency against established constructs, and identifies the empirical research agenda required to test it. That agenda is detailed in the Limitations and Future Research section.

The literature synthesized here suggests that digital innovation is reshaping cross-border business activity in ways existing theory does not fully account for. Established models still offer real insight into how firms learn about foreign markets, build the relational networks that support international growth, and manage the commitment decisions that geographic expansion requires. The Uppsala model's emphasis on experiential learning, network theory's attention to relationship-mediated market access, and Dunning's (2000) OLI framework's parsing of ownership, location, and internalization advantages each retain their explanatory power. However, a conceptual reading of the literature suggests that the widespread adoption of digital tools has materially altered the conditions under which all of that happens, compressing learning cycles, lowering the cost of network formation, and reducing the resource thresholds that staged models treat as necessary preconditions for international commitment.

For Ghanaian firms specifically, a synthesis of the published evidence suggests that digital capability appears to ease certain traditional barriers to cross-border expansion while simultaneously opening fresh opportunities for sub-regional and Pan-African trade. This is not to claim that digital tools dissolve all barriers; the institutional voids, infrastructure deficits, and regulatory asymmetries that characterize many African markets remain consequential constraints, but rather that digital capability redistributes those constraints in ways that existing frameworks were not designed to capture. The cases of mPharma, Zeepay, and Farmerline, as documented in independent sector and academic sources, are consistent with this conceptual reading. However, it bears emphasis that their inclusion here is illustrative rather than evidential: they illuminate the plausibility of the theoretical propositions advanced but do not constitute a test of those propositions. Systematic empirical investigation, whether through comparative case studies, survey-based research across Ghanaian digital firms, or longitudinal tracking of internationalization trajectories, remains the necessary next step, and is identified explicitly in this paper's agenda for future research.

Digital Technology and Market Knowledge

One foundational assumption of the Uppsala model is that direct experience must precede any significant resource commitment. Abroad, firms gradually reduce uncertainty through participation in foreign markets, moving toward more distant, higher-commitment engagements only as their understanding deepens.

Digital tools have not done away with the need for market knowledge, but they have changed how that knowledge gets obtained. Firms can now tap into countless online sources that reveal consumer preferences, shifting market conditions, competitor behavior, and purchasing patterns insight that once required costly travel, local intermediaries, or years of relationship-building can, quite often, now be gathered digitally instead.

For many Ghanaian businesses, social media, e-commerce platforms, and messaging applications offer quick access to prospective customers across several countries at once. Customer feedback, online reviews, engagement metrics, and sales data create a steady stream of information firms can use to weigh up opportunities and refine their offerings, all without first setting foot in the target market.

These developments have something to say about how we understand psychic distance, too. Classical internationalization theory holds that differences in culture, language, and institutions create uncertainty that discourages firms from expanding outward. Digital communication can mitigate parts of that challenge by enabling firms and customers to interact regardless of physical location; tools such as automated translation, multilingual content, remote customer service, and online communities have made cross-border interaction considerably less daunting.

Even so, a conceptual reading of the literature cautions against overstating what digitization actually dissolves. Informational barriers, the asymmetries of market knowledge that Uppsala theory places at the centre of psychic distance, are genuinely reduced by digital tools, and that reduction is well documented in the international business literature (Petersen, Pedersen & Lyles, 2008; Shaheer & Li, 2020). Regulatory requirements, legal frameworks, tax structures, and industry-specific compliance standards, however, remain stubbornly jurisdiction-specific and are not meaningfully compressed by digital capability alone.

Scholars working on institutional distance in African markets have noted that governance-related barriers, differing contract enforcement regimes, inconsistent customs procedures, and fragmented regulatory architectures continue to shape the costs and risks of cross-border activity even for firms that have eliminated informational friction almost entirely (Lashitew et al., 2019). This distinction matters theoretically. It suggests, based on a synthesis of the existing literature rather than independent evidence, that digitization reconfigures psychic distance rather than erasing it: the informational and relational dimensions of distance contract, while the institutional and governance dimensions remain largely intact. Cross-border activity, in this interpretive reading, continues to be shaped by distance, but the nature of that distance changes in ways that existing frameworks, built before digital capability became a meaningful variable, were not designed to track.

Digital tools, in other words, appear to reduce the barriers that firms can address through information and relationship-building while leaving largely untouched the barriers that only regulatory convergence or

institutional reform can resolve, a distinction with direct implications for how policymakers and managers should think about the internationalization potential of Ghanaian digital firms under the African Continental Free Trade Area.

Digital Networks and International Expansion

Network-based perspectives on internationalization place relationships at the center of how firms access information, resources, and opportunities. Firms without connections in the relevant business circles often struggle to find partners, customers, and intermediaries abroad and building those ties has historically taken considerable time and sustained effort.

Digital technology has widened the means by which firms build and maintain commercial relationships. Web-based platforms, professional networking services, online trading venues, and app-based ecosystems enable companies to engage with counterparts and customers well beyond their immediate geography, and participation in these systems often grants access to resources that smaller firms would otherwise struggle to reach on their own.

The experience of Ghanaian firms makes this shift fairly clear. Businesses increasingly connect with buyers, suppliers, investors, and service providers through digital platforms that operate across national borders. Instead of rebuilding relationships from scratch in each new market, firms can often leverage existing online ecosystems to gain visibility and establish trading relationships much faster.

This is a real departure from how network formation used to work. Entry into networks can now happen far more quickly and with far fewer resources than conventional relationship-building typically demanded. In some cases, simply joining a digital platform places a firm almost immediately within a large community of users and potential commercial partners, accelerating market access and chipping away at some of the disadvantages associated with outsider status.

That said, digital connections do not fully replace conventional business relationships. Trust, reputation, and local market knowledge remain essential, particularly in sectors carrying real risk or strict compliance requirements. Online networking is probably best understood as complementary to established relationship-building practices, not a substitute for them.

Speed and Mode of Internationalization

Conventional internationalization theory generally ties the speed of expansion to a firm's commitment to a given entry mode, with many firms starting with low-commitment activities such as exporting before moving toward more resource-intensive forms of international engagement.

Growing reliance on digital tools has made this sequence a good deal less predictable. Firms can increasingly reach foreign customers, manage operations, and form partnerships with minimal investment in physical infrastructure, and digital platforms allow firms to engage multiple markets at once while maintaining a relatively light physical footprint.

Several Ghanaian companies illustrate this well, expanding into neighboring markets through technology-enabled business models. By using electronic payment systems, cloud computing services, online support channels, and virtual meeting tools, firms can manage cross-border operations from a single base, scaling internationally without first setting up branch offices, warehousing, or production facilities in every target market.

These shifts challenge the old assumption that internationalization has to follow a fixed, sequential

progression. Firms may instead enter several markets at once and adjust their level of commitment as opportunities and resources allow, a more flexible kind of international growth, marked by experimentation, adaptation, and continuous learning rather than a tidy staircase of stages.

None of this means traditional entry strategies have stopped mattering. In many sectors, local staff or physical infrastructure remain essential, particularly where regulation, logistics, or customer relationships call for someone on the ground.

Digital capability provides firms with additional pathways that earlier theoretical models largely overlooked.

Evidence from the Ghanaian Context

Ghana's commercial landscape offers many examples of how digital capability is shaping international growth. Firms in fintech, healthcare, agriculture, and e-commerce increasingly rely on digital systems to coordinate cross-border operations, a clear demonstration of how technology can connect businesses with customers and partners while reducing some of the costs traditionally associated with entering foreign markets.

At the same time, Ghana's experience makes the limits of digital transformation pretty clear too. Reliable connectivity remains patchy outside major urban centres, digital literacy varies widely across firms and the broader population, and device costs still shape who can participate in online commerce. Together, these factors limit how much value businesses can actually extract from digital opportunities.

Cross-country differences in legal frameworks, payment systems, and commercial norms continue to weigh heavily on internationalization outcomes. Initiatives like the Pan-African Payment and Settlement System represent real progress.

However, full regional integration is still some way off, so firms expanding across Africa must continue to navigate a complex institutional landscape even as digital connectivity improves around them.

On balance, this analysis suggests digital capability works as a catalyst rather than a substitute for broader economic and institutional development. Its impact depends not just on what a firm itself can do digitally, but on the quality of the networks, governance structures, and market infrastructure around it.

Toward a Framework of Digitally Accelerated Internationalization

All of these point to the need for a more nuanced understanding of cross-border expansion in the digital age. Traditional theory still explains learning, uncertainty reduction, and relationship-building reasonably well, but it does not fully capture the speed and flexibility with which many firms now engage foreign markets.

What is needed, this paper proposes, is an updated theoretical framework in which digital business capability occupies a mediating role between a firm's internal resource endowment and its international outcomes, not as a replacement for the established drivers of overseas growth, but as the mechanism through which those drivers are activated, accelerated, or restructured under contemporary digital conditions. Figure 1 depicts this framework schematically.

The following paragraphs describe each construct and the relationships between them in sufficient detail to make the framework testable.

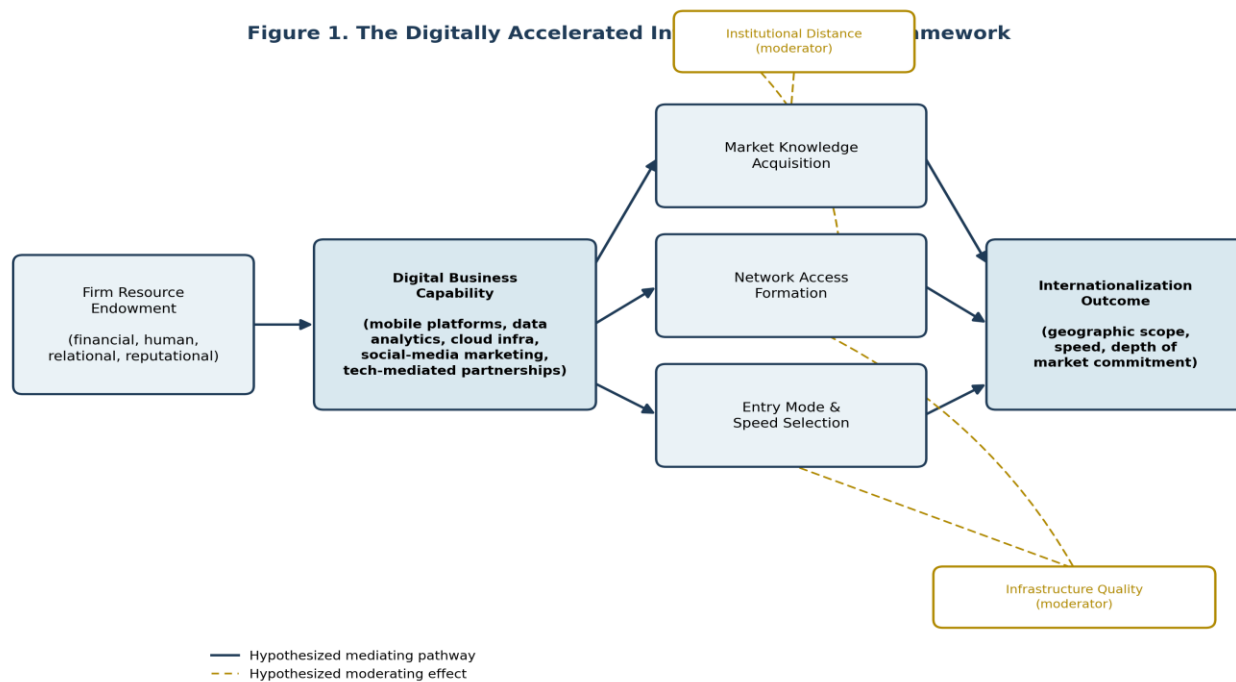


Figure 1. The Digitally Accelerated Internationalization Framework, showing firm resource endowment mediated by digital business capability through three parallel pathways (market knowledge acquisition, network access formation, entry mode and speed selection) to internationalization outcome, moderated by institutional distance and infrastructure quality.

The framework comprises four principal constructs arranged in a mediating sequence. The first is **firm** resource endowment, which captures the baseline assets, financial, human, relational and reputational that a firm brings to the internationalization process. This construct maps broadly onto the resource-based view of the firm (Barney, 1991) and onto the ownership advantages in Dunning's (2000) OLI paradigm. However, it is specified here to include the intangible and knowledge-based assets that digital firms disproportionately hold. The second construct is digital business capability, defined as the firm's capacity to deploy digital tools, mobile platforms, data analytics, cloud infrastructure, social-media-mediated marketing, and technology-enabled partnership architectures in ways that generate competitive advantage in cross-border contexts (Nambisan, 2017; Teece, 2018). This is the mediating construct, and its mediating role is the framework's central theoretical claim: digital business capability is proposed to transform the relationship between what a firm has and what it can achieve internationally, such that firms with modest resource endowments but strong digital capability can achieve international outcomes that resource endowment alone would not predict.

The third construct encompasses three parallel mediating pathways through which digital capability affects internationalization: market knowledge acquisition, network access formation, **and** entry mode and speed selection. These three pathways are theorized as partially independent channels rather than a single undifferentiated mechanism, and distinguishing between them is important for both theoretical precision and empirical testability. Digital capability accelerates market knowledge acquisition by reducing the informational asymmetries that Uppsala theory identifies as the primary constraint on internationalization pace (Johanson & Vahlne, 1977; Petersen, Pedersen & Lyles, 2008): firms can gather, process, and act on foreign market intelligence through digital channels at a fraction of the cost and time that physical presence or sequential experiential learning would require. Digital capability reshapes network access formation by enabling firms to establish and maintain commercially productive relationships with foreign partners, distributors, and customers without the geographic proximity that network theory traditionally treats as a prerequisite for trust-building (Coviello, 2006; Shaheer & Li, 2020). Moreover, digital capability directly influences the selection of entry mode and speed by making lighter, faster, and more reversible modes of market entry, platform participation, digital-only market presence, and technology-mediated partnerships viable alternatives to the equity-intensive, commitment-heavy modes that staged models assume (Luo & Tung, 2007; Hennart, 2014).

The fourth construct is internationalization outcome, operationalized along three measurable dimensions: the geographic scope of international activity, the speed of internationalization from founding or digital capability acquisition, and the depth of market commitment achieved. These dimensions map onto established operationalizations in the empirical internationalization literature (Zahra & George, 2002; Hitt et al., 2006) and are included specifically to make the framework's predictions tractable for future quantitative or mixed-methods testing.

Two boundary conditions are proposed as moderators of the central mediation. Institutional distance, the degree of regulatory, legal, and governance divergence between home and target markets, is proposed to moderate the strength of the digital capability pathways, such that higher institutional distance weakens the market knowledge and network access pathways while leaving the entry mode pathway relatively intact, since digital entry modes are partially insulated from governance-related friction (Lashitew et al., 2019). Infrastructure quality in the target market moderates the network access and entry mode pathways specifically, since digital capability can only substitute for physical presence where baseline digital infrastructure connectivity, mobile penetration, and payment systems are in place in the target market at sufficient scale (GSMA, 2023; Tsan et al., 2019).

Together, these constructs and relationships constitute a framework that is descriptively coherent, internally consistent, and critically falsifiable. A study finding that digital capability does not mediate the resource-outcome relationship, or that the three pathways are empirically indistinguishable, or that institutional distance does not moderate the mediation, would constitute disconfirming evidence. The framework thus advances beyond narrative description to offer a structure of propositions that future empirical work, whether through comparative case analysis, structural equation modelling across a sample of Ghanaian or West African digital firms, or longitudinal tracking of internationalization trajectories, can directly engage with and test.

Within this framework, electronic payment systems, online marketplaces, digital marketing tools, and data analytics all strengthen a firm's capacity to spot opportunities and engage foreign markets. They lower informational barriers, ease entry into business networks, and support expansion strategies that require comparatively modest physical investment, allowing firms to start international operations sooner, scale faster, and pursue a wider range of entry strategies than older models would have predicted.

The concept of digitally accelerated internationalization is meant to capture these dynamics. It recognizes that cross-border growth is still shaped by learning, relationships, and institutional context, while also acknowledging that digital tools are changing how those elements play out in practice, offering, hopefully, a more accurate lens for understanding contemporary African enterprises operating in increasingly connected digital economies.

To facilitate empirical testing, the mediating and moderating relationships proposed in the framework are stated explicitly as testable propositions and summarized in Table 1.

Proposition 1: Digital business capability mediates the relationship between firm resource endowment and internationalization outcome (geographic scope, speed, and depth of market commitment).

Proposition 2: Digital business capability accelerates internationalization through three distinct mediating pathways: (a) accelerated market knowledge acquisition, (b) accelerated network access formation, and (c) expanded entry mode and speed selection.

Proposition 3: Institutional distance moderates the mediation effect of digital capability on internationalization outcome, such that the effect is weaker when institutional distance is greater.

Proposition 4: Infrastructure quality in the target market moderates the mediation effect of digital capability on internationalization outcome, such that the effect is stronger when infrastructure quality is higher.

Proposition 5: The three mediating pathways (market knowledge, network access, entry mode/speed) are empirically distinguishable from one another rather than representing a single, undifferentiated mechanism.

Table 1: Implications for Theory, Policy, and Practice

Construct	Definition	Possible Measures (Indicative)	Proposition Reference
Firm Resource Endowment	The baseline tangible and intangible assets (financial, human, relational, reputational) a firm possesses.	Firm size (employees/assets); R&D intensity; managerial experience; international experience; international network ties.	P1, P2
Digital Business Capability	The capacity to deploy digital tools (e.g., platforms, analytics, mobile payment, social media) for strategic advantage.	Scale measuring use of digital marketing, e-commerce, data analytics, mobile payments, and platform participation.	P1, P2, P3, P4
Market Knowledge Acquisition	The speed and quality of learning about foreign customer preferences, market conditions, and competitive dynamics.	Self-reported speed of market learning; frequency of digital market intelligence use; reduction in perceived foreign market uncertainty.	P2a, P5
Network Access Formation	The speed and quality of establishing commercially productive relationships with foreign partners, customers, and distributors.	Number of foreign partners acquired digitally; self-reported ease of network formation; speed of trust-building with foreign partners.	P2b, P5
Entry Mode and Speed Selection	The range, resource-intensity, and time-to-commitment of foreign market entry strategies.	Number of entry modes used; presence/absence of resource-intensive modes (e.g., FDI); time from founding/digital adoption to first international transaction.	P2c, P5
Internationalization Outcome	The measurable result of international activity.	Geographic scope (number of foreign markets); speed of internationalization (years to foreign entry); depth of market commitment (foreign sales ratio, mode type).	P1, P2, P3, P4
Institutional Distance	The degree of regulatory, legal, and governance divergence between home and target markets.	Kogut and Singh (1988) index; regulatory or governance distance measures from World Governance Indicators.	P3
Infrastructure Quality	The availability and reliability of digital and physical infrastructure in the target market.	Mobile penetration, internet connectivity, electricity reliability, digital payment system adoption in target market.	P4
Construct	Definition	Possible Measures (Indicative)	Proposition Reference

Implications for Theory

As digital tools become increasingly central to cross-border commerce, they raise fair questions about how well long-standing internationalization theory still holds up. The Uppsala model, network perspectives, and international entrepreneurship frameworks remain influential, but they were largely developed before today's

digitally connected business environment existed. The experiences of digitally enabled firms suggest that certain foundational assumptions within these theories are worth revisiting.

One area that needs fresh attention is how firms come to understand foreign markets in the first place. Established frameworks emphasize experiential learning gained through direct involvement abroad, and that remains important, but digital tools now offer alternative routes to gathering insights and reducing uncertainty. Firms can build market knowledge through online interaction, data-driven measurement, and platform participation, making strategic decisions on the back of information that was once hard to access. Future theoretical work should probably place greater weight on these digital knowledge channels and on how they interact with traditional, experience-based learning.

These findings also have something to say about network-based accounts of internationalization. Current network theory stresses trust and relationship-building as the route to opportunities and resources. Digital platforms have changed how firms engage with networks rather than making relationships matter less. Firms increasingly plug into existing online ecosystems that link customers, suppliers, and partners across multiple countries, thereby speeding access to cross-border opportunities in ways quite different from the slow, incremental network development described in earlier research. Future studies may need to draw a clearer line between traditional network embeddedness and participation in digitally enabled commercial communities.

The discussion also invites a rethink of the debates around rapid international expansion. Born-global research has shown that certain firms can internationalize early despite limited resources. However, many Ghanaian companies operate in sectors quite different from the high-tech ventures usually associated with the concept. Their experience suggests digital capability can support accelerated international growth even in fairly conventional industries, broadening existing debates in international entrepreneurship and hinting that the conditions enabling rapid expansion may be more widespread than we previously assumed.

More broadly, this research adds to ongoing efforts to build international business theory that better reflects conditions in developing regions. Much of the foundational scholarship rests on evidence from Europe and North America; that work remains valuable, of course, but the growing weight of African digital ecosystems makes a strong case for incorporating perspectives from more diverse institutional and developmental contexts, strengthening theory and making it relevant to an increasingly varied global economy.

Implications for Policy

These findings matter greatly to policymakers seeking to strengthen the international competitiveness of Ghanaian firms. Digitization is increasingly treated as a central pillar of development strategy, particularly for firms held back by limited infrastructure, market access, and capital. How far firms can participate in sub-regional and continental markets depends heavily on the quality of the digital environment in which they operate.

Continued investment in digital infrastructure is still essential. Reliable internet access, affordable high-speed connectivity, and broad availability of digital tools form the base on which firms build digital business capability in the first place. Ghana has made real progress in expanding digital access. However, significant gaps persist between urban and rural areas, and closing them would broaden participation in online commerce and open opportunities for more firms to enter international markets.

Developing harmonized payment systems is another key priority. Efficient cross-border payment infrastructure cuts costs and simplifies transactions between firms operating in different countries. Initiatives aimed at improving payment interoperability across the continent show real promise. However, there is still work to do to ensure firms can transact seamlessly across neighbouring markets, which will require closer coordination among financial institutions, regulators, and regional bodies.

Regulatory alignment matters as much. Variations in data protection rules, consumer protection standards, tax policy, and e-commerce regulation continue to introduce risk and uncertainty for firms operating across borders. Efforts to harmonize regulation under the African Continental Free Trade Area would lower barriers to digital trade and encourage deeper participation in regional production and supply chains.

Investment in skills development should stay central to policy planning too, since digital tools only deliver benefits when firms actually know how to use them. Training programmes focused on digital marketing, e-commerce management, data analysis, and technology governance would strengthen Ghanaian firms' competitiveness in increasingly digitized markets, particularly for small and medium enterprises, which often lack the resources to hire specialised expertise in-house.

With the AfCFTA Secretariat headquartered in Accra, Ghana has a genuinely distinctive opportunity to position itself as a leader in digital trade and regional economic integration. By strengthening digital infrastructure, supporting innovation, and advancing regulatory harmonisation, Ghana can help local firms capture the opportunities as continental markets begin to open up.

Implications for Practice

For business leaders, these findings underscore that building digital capability deserves to be treated as a strategic priority within broader international growth plans, not an afterthought. Digital tools are not just operational conveniences anymore; they sit at the centre of how firms identify opportunities, engage customers, and coordinate cross-border activity.

A key consideration for managers is the role digital financial services play in supporting international transactions. The ability to receive payments, settle obligations, and manage cash flow efficiently can be the difference between engaging a foreign market successfully and not engaging it at all. Firms that integrate digital payment solutions well tend to be better placed to serve customers across multiple countries while keeping their internal operations relatively streamlined.

Building strong digital marketing capabilities matters just as much. Social media, online advertising platforms, and digital messaging channels offer cost-effective ways to reach prospective customers abroad, allowing leaders to test the waters, gather insights into customer preferences, and gauge market potential before committing significant resources.

Engaging with digital platforms can open further growth pathways, too. E-commerce marketplaces, logistics networks, and connected digital ecosystems enable firms to reach customers and partners well beyond their home markets, a particularly valuable route for smaller businesses seeking to reduce their dependence on costly physical infrastructure and traditional distribution channels.

Treating data as a strategic asset matters as well. Information generated through websites, online transactions, customer interactions, and social media activity can reveal genuinely valuable insight into market trends and performance. Firms with strong analytical capability tend to be better placed to spot emerging opportunities and adapt quickly when conditions shift.

Leaders should bear in mind, though, that digital tools do not remove the need for local insight and relationship-building. Successful internationalization still requires understanding customer needs, regulatory environments, and established business practices in each target market. Digital resources work best when they are folded into a broader strategy that accounts for the institutional realities of each country, rather than treated as a shortcut around them. Taken together, these observations suggest digital capability is becoming an increasingly decisive factor in global competitiveness. Firms that invest in building it are likely to be better placed to enter regional and international markets. At the same time, those slower to adapt may find themselves at an increasing disadvantage as the business environment continues to evolve around them.

CONCLUSION

The growing adoption of digital tools is transforming how firms engage with international markets. Evidence from Ghana and the wider African continent suggests digital capability increasingly shapes how companies learn about foreign markets, build commercial relationships, and expand beyond domestic boundaries. Much of classical internationalization theory remains relevant; it is not being thrown out, but the conditions surrounding cross-border expansion have changed substantially. Online platforms, digital payments, social

media, and data analytics have opened new pathways for firms to enter regional and global markets, often requiring far fewer resources than traditional approaches ever assumed.

This paper has argued that internationalization should increasingly be understood as a process shaped by digital technology. Rather than displacing established drivers of foreign expansion, digital capability works alongside factors such as entrepreneurial orientation, market knowledge, and network ties, and its influence is most pronounced where firms operate under resource constraints and navigate diverse institutional environments. In those settings, digital tools can improve access to information, ease entry into business networks, and support more flexible approaches to foreign market entry.

The proposed framework for digitally accelerated internationalization offers a way to interpret these shifts in an African context. It acknowledges that firms still face real challenges tied to regulation, infrastructure, and institutional variation, while recognizing that digital capability can alter both the speed and the approach firms take toward cross-border opportunities, thereby bridging established internationalization theory with the realities of contemporary digital commerce.

These findings also point to the need to strengthen the broader ecosystem supporting digital trade. Investment in digital infrastructure, payment interoperability, regulatory alignment, and skills development will significantly shape how effectively firms can capitalize on the opportunities created by the African Continental Free Trade Area. For business leaders, building digital capability is becoming an increasingly central part of international growth strategies; for policymakers, creating an environment that enables firms actually to use these capabilities remains an essential priority.

LIMITATIONS AND FUTURE RESEARCH

Like any conceptual contribution, the arguments advanced in this paper would benefit substantially from empirical testing, and it is important to be specific about what that testing should involve and why it has not been undertaken here.

The primary limitation of this paper is precisely its conceptual nature. The digitally accelerated internationalization framework proposed here, in which digital business capability mediates the relationship between firm resource endowment and international outcomes through three pathways of market knowledge acquisition, network access formation, and entry mode and speed selection, is a theoretical proposition, not a tested finding. The framework is internally consistent and grounded in a structured synthesis of published scholarship, but internal consistency is not the same as empirical validity. A framework that has not been tested against data from actual firms cannot yet claim to explain, predict, or generalize; it can only claim to organize existing knowledge in a way that is coherent, falsifiable, and useful as a basis for future investigation. That is the claim this paper makes, and readers should weigh it accordingly.

This limitation was acknowledged in the Introduction and restated at the opening of the Analysis and Discussion section rather than appearing here for the first time, precisely because a reader who encounters a methodological disclaimer only in the conclusion has already read the entire analytical section without the framing needed to interpret its claims correctly. Transparency about a paper's epistemological status is owed to readers from the outset, not retrospectively.

The empirical research agenda that would allow the framework's propositions to be tested is both substantial and tractable. At the firm level, future research might examine how specific configurations of digital capability platform participation, data analytics adoption, and mobile-payment integration, shape entry-mode decisions, internationalization speed, and geographic scope across different industries and ownership structures. Comparative studies spanning multiple African regions would offer particularly valuable insights into how variation in digital infrastructure readiness and institutional distance shapes the strength of the three mediation pathways proposed in the framework. Ghana provides a useful starting point given the focus of this paper, but the framework's boundary conditions, institutional distance and infrastructure quality as moderators generate predictions that should behave differently in, for example, East African fintech markets compared to francophone West African contexts where regulatory architectures diverge more sharply from Anglophone norms.

Longitudinal research designs would deepen understanding in ways that cross-sectional studies cannot, since the framework's core claim is dynamic: digital capability is proposed to compress the experiential learning cycle that Uppsala theory treats as the engine of sequential internationalization. Testing that claim properly requires observing firms over time, tracking whether digital capability acquisition precedes acceleration in internationalization pace, and examining whether the relationship holds as both market conditions and technology infrastructures continue to evolve. Structural equation modelling applied to survey data from a representative sample of Ghanaian or West African digital firms would allow the mediation and moderation relationships specified in Figure 1 to be estimated directly. Comparative case study designs, following the methodological logic of Eisenhardt (1989) and Yin (2018), would allow the causal mechanisms behind each pathway to be examined with the depth that quantitative approaches cannot easily achieve. Both are needed, and neither substitutes for the other.

Continued development of Africa's digital infrastructure, alongside ongoing efforts to deepen regional economic integration, is likely to keep generating opportunities for firms pursuing growth beyond their home markets. Understanding how digital capability shapes internationalization will, for that reason, remain an important focus for researchers and policymakers in the years ahead.

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