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Digital Technologies for Sustainable International Business

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The scholarly investigation into the impact of digitalization on firms' activities has sparked a new frontier in international business (IB) research (Luo, 2022, Hennart, 2019). Within this scholarly discourse, researchers are exploring the multifaceted implications of digital technologies (DTs) and their transformational influence on global business operations (Brieger et al., 2022, Nambisan et al., 2019). Essentially, these emerging technologies act as catalysts for digital globalization, where firms leverage their digital assets to internationalize (Verbeke and Hutzschenreuter, 2021), unveiling myriad new opportunities for firms (Brieger et al., 2022, Lee et al., 2022, Luo and Zahra, 2023).

One prominent aspect of digitization is its role in accelerating the process of globalization (Autio et al., 2021). By deploying the DTs, such as digital platforms, data analytics portals, and AI-powered advertising and personalized communication, firms can transcend geographical barriers and expand their reach into previously untapped markets (Kshetri and Dwivedi, 2024). This has disturbed domination in global markets, democratizing market entry, enabling smaller businesses to compete effectively with MNEs in various international arenas (Nuccio and Guerzoni, 2019). Relatedly, the literature emphasizes the importance of role of DTs in gaining competitive advantages in international markets by, for example, harnessing AI and machine learning to gain valuable insights into consumer behavior, market trends, and competitor
competitive strategies (Amankwah-Amoah et al., 2024, Ratten et al., 2024). This, in turn, has enabled internationalizing firms to tailor and adapt their offerings to account for domestic variation, thereby enhancing their international position (Wang, 2020). Operational efficiencies are another research frontier in this domain, where scholars have highlighted the transformative potential of DTs in optimizing various operational processes within MNEs and their extended GVCs (Sanguineti et al., 2023). Cloud computing, Internet of Things (IoT), and automation tools have revolutionized global supply chains, logistics, and customer relationship management (Ciulli and Kolk, 2023, Kache and Seuring, 2017), empowering firms to achieve higher levels of efficiency and agility in managing their international operations (Gammelgaard and Nowicka, 2023, Giannakis et al., 2019).

In parallel to these advancements, there remains a continuous interest in the UN's Sustainable Development Goals (SDGs) as a blueprint for sustainable future (George et al., 2016, UN, 2023). The SDGs, comprises 17 distinct challenges that we must successfully addressed to realize this ambitious aim (Buckley, 2022). The SDGs, which garnered significant attention since their publication (Mondejar et al., 2021), are designed to eliminate poverty, preserve the planet, ensure prosperity, justice and equality, and emphasize the interdependence of the economic and social dimensions of sustainable development (Berrone et al., 2023, UN, 2023). Due to their importance, researchers from different disciplines are actively seeking to examine the contingencies and processes that underlie the achievement of these goals (Alexander et al., 2022, Berrone et al., 2023).

Nonetheless, the pursuit of SDGs presents considerable challenges for firms with cross-borders operations (Van Zanten and Van Tulder, 2018). That is, while the achievement of SDGs encourages these firms (e.g., MNEs, extended GVC entities, and born globally), to leverage their distinct capabilities (e.g., innovation, market intelligence, transformation) (Griggs et al., 2013), the challenge of identifying how these companies can effectively incorporate the aspirational SDGs into their globalization thinking remains unresolved (Berrone et al., 2023). Moreover, these firms face increasing public pressure to integrate the SDGs into their international strategic agenda (Buckley, 2021, Van Zanten and van Tulder, 2021). This integration, however, adds complexity to the challenge of simultaneously balancing various legal obligations, ethical responsibilities, and economic targets for these companies across their value chains (Bocken and Geradts, 2020). Hence, a prevalent notion exists that not only is there a lack of a "shared understanding of how the 17 SDGs can be [effectively] operationalized" (Sachs et al., 2019, p. 805), but there is also a limited understanding of corporate perspective, or how companies can ensure that their internationalization strategies can contribute to sustainable development (Ciulli and Kolk, 2023); “The question is no longer ‘why’ MNEs should develop sustainability strategies, but rather ‘how’” (Van Tulder et al., 2021, p. 1). Therefore, combining the digitalization, internationalization, and the SDGs components represents a vital frontier for research and innovation (Luo, 2021, Ahi et al., 2023), promising the creation of a new wave of IB theory and practices that can accelerate sustainable development trajectory (Ciulli and Kolk, 2023, George et al., 2021).
Indeed, the swift progression of DTs has precipitated a paradigm shift within the globalization environment (Amankwah-Amoah et al., 2021, Amankwah-Amoah et al., 2024, Buckley, 2021, Hanelt et al., 2021, Tatarinov et al., 2023). This shift towards digitalization has engendered a multifaceted impact (Wang et al., 2024), affording businesses novel prospects that extend beyond typical creating and capturing value (George and Schillebeeckx, 2022, Oliveira et al., 2021), manifesting a significant potential to address pressing societal concerns (Broccardo et al., 2023, George et al., 2021, Ahi et al., 2022). That is, DTs can help MNEs and other internationalizing firms to address SDGs-related issues within their global chains and operations by providing novel access to information, resources, and solutions (George and Schillebeeckx, 2022). For example, blockchain technology can enhance transparency, accountability, and governance in GVCs (Buckley, 2021) leading to better working conditions in remote areas (Al-Tabbaa et al., 2024). Similarly, MNEs have leveraged cloud technology to align their data centers in various geographical regions with renewable energy practices, thus advancing SDGs for climate action and clean energy (Patchell and Hayter, 2021). Yet, and despite these promises, when considering the connection between the three aspects (digitalization, internationalization, and SDGs) three key issues emerge.

**Issue 1: Strategic Integration**

While there is an acknowledgment of the transformative potential of DTs (Lanzolla et al., 2020), which is largely rooted in environmental/sustainability studies (Castro et al., 2021, Stuermer et al., 2017), we lack the theoretical understanding that explain how DTs can influence the strategic choices and actions of MNEs (and other internationalizing firms), and their sustainable impact (Buckley et al., 2023).

In fact, the existing body of IB theories (e.g., the new internalization theory, the Uppsala model, and the eclectic paradigm) and non-IB theories (e.g., resource-based view, institutional theory, and stakeholder theory) were developed in an era preceding the rapid advancements of digitalization and globalization (Chen, 2005, Narula et al., 2019, Coviello et al., 2017). These theories, therefore, fall short in comprehensively capturing the intricate dynamics involved in firms internalizing activities in a globalized, digitalized world (Luo, 2022), particularly when considering both the positive and negative aspects of DTs integration (Ciulli and Kolk, 2023). For example, digitalization is recognized as a strategic capability that empowers firms to generate value across various dimensions of sustainability (Ghauri et al., 2021). However, rather than perceiving digitalization merely as a tool for achieving environmental objectives (Liu et al., 2023), it is imperative to conceptualize the simultaneous impact of integrating digitization with internationalization strategies on the various organizational levels, where digitization serves as a long-term enabler of sustainable development (Ciulli and Kolk, 2023).

Moreover, existing frameworks like GVC analysis primarily focus on economic aspects, neglecting the broader societal and environmental implications of digitalization and internationalization. This narrow scope hinders understanding the integration with SDGs which encompass various dimensions. In this respect, given the geographical expansion of globalization
activities, this necessitates complex collaborative dialogues between MNEs and their GVC-related national and international stakeholders to ensure consistency and alignment in addressing sustainability issues across different regions while accommodating the institutional idiosyncrasies of these locations (George and Schillebeeckx, 2022). Furthermore, while studies like Kano et al. (2020) acknowledge the potential of digitization aspects in GVCs, a comprehensive theoretical framework integrating digitalization, SDGs, and internalization within a global context remains absent (Oliveira et al., 2021). Importantly, we require a fresh perspective that conscientiously takes into account the idiosyncrasies of "digital MNEs" or "Platform MNEs" (Mihailova, 2023). This perspective should delve into the emerging complexities embedded in these new organizational forms, such as power dynamics within digital value chains, ownership of value-added data, and business model innovation facilitated by platformization (Wu and Gereffi, 2018), and these how complexities and their implications can intersect with social and environmental upgrades endeavors.

Therefore, robust theoretical foundations would be imperative to unpack the potential of digital technology for enhancing sustainable internationalizing, as firms would demand fundamental adaptations within their global operations and their underpinning business models, structures, and culture to align with the SDGs-oriented mindset (Inigo et al., 2017, Sinkovics et al., 2021). Indeed, there is a dearth of conceptual analyses and empirical evidence that clarify the explicit mechanisms through which firms can viably deploy these technologies to boost sustainable globalization strategy (Dantas et al., 2021, Luo et al., 2023). Understanding how DTs can foster economic growth, reduce inequalities, and support sustainability is crucial for enacting effective technology adoption strategies (Birkel and Müller, 2021) and innovating sustainable business models (Bonnet and Westerman, 2020, Sinkovics et al., 2021).

**Issue 2: Tensions and trade-offs**

The interplay between digitalization, internalization, and SDGs presents a complex web of interdependencies. Therefore, developing a rigorous conceptualization of the components and dynamics of the digitalization-SDGs-internationalization nexus is necessary to recognize the tensions and trade-offs that are likely to emerge. For instance, aligning a firm’s digitalization strategy with the SDGs can create the paradox of value creation versus value capture (George and Schillebeeckx, 2022). Within this dialectic, firms grapple with the intricate tensions between their imperative to foster social and environmental value through the deployment of DTs and their concurrent necessity to secure economic rent (APA, 2022, Gunaratne et al., 2023). Similarly, while strategic alignment can help optimize the fit between DTs, organizational capabilities, and SDG objectives, it can also limit the scope for innovation and experimentation in other international context (Sarwar et al., 2023), as firms would struggle to maintain coherence and consistency among digital transformation components in their global operations and fail to be flexible to changing demands and conditions embedded in the international markets (Bouncken et al., 2023).

At the same time, there is a need to explore unintended consequences (e.g., human rights and data privacy, cybersecurity, and the digital divide) of DT adoption (Buckley, 2023). In this
regard, IB scholars have started discussing the ‘dark side’ of digital globalization (Sinkovics and Sinkovics, 2020, Srinivasan and Eden, 2021, Verbeke and Hutzschenreuter, 2021), for example, warning that digital platforms, with their embedded AI capabilities, can create abuse of market power, potentially undermining the equity and prosperity targets embedded in the SDGs (Naudé, 2023). As MNEs leverage advanced digital tools and automation, there is a risk of widening the gap between skilled and unskilled workers, leading to job displacement, particularly in sectors reliant on manual labor, contributing to unemployment and income inequality in developing economies (Grimshaw, 2020). Moreover, digitalization may concentrate economic power in the hands of a few global firms, perpetuating the marginalization of smaller enterprises and fostering a new era of digital monopolies (Loertscher and Marx, 2020). Furthermore, digitalization can contribute to environmental degradation and exacerbate climate change. The proliferation of data centers and digital infrastructure consumes vast amounts of energy and resources, leading to increased carbon emissions and environmental pollution. This can create the risk of MNEs seeking to exploit international markets with institutional voids as a strategy to externalize their negative environmental impact (cf. Becker-Ritterspach et al., 2019).

Therefore, other researchers have questioned if the DTs are "part of the [sustainability] problem or the solution" (Dwivedi et al., 2022). Indeed, the challenges imposed by the new technologies (referred to as the Industry 4.0 revolution) have led to the development of Industry 5.0 which aims to go beyond efficiency and productivity as the main goals and to consider the well-being of workers, society, and the planet by offering a vision of a more sustainable, human-centric, and resilient future for industry and society (Xu et al., 2021). Accordingly, addressing these tensions and challenges is needed to help identify the synergies and complementarities between different dimensions of digitalization, sustainability and internationalization, while accounting for potential negative implications.

**Issue 3: Contextualizing the Digitalization-SDGs-Internationalization Nexus**

Contextualizing the SDGs within the corporate framework is a complex and dynamic process that requires a deeper understanding of the institutional factors that shape it. However, existing research on this topic is limited, leaving several critical gaps that need to be addressed (Berrone et al., 2023). Importantly, global versus local perspective for multinational corporations operating in diverse regions (Van Zanten and Van Tulder, 2018, Van Tulder et al., 2021). This could include examining the role of headquarters in shaping global-local strategies (Buckley and Casson, 2021) and the extent to which these strategies vary across different national and regional contexts (considering the discrepancies in the levels of economic development - developed, emerging, and developing nations) (Al-Tabbaa et al., 2023, Chabowski et al., 2023). This issue is also relevant to SMEs that operate across borders (i.e., internationalizing SMEs or born global firm), as it is crucial to examine the institutional factors that facilitate or hinder their digitalization-SDGs strategy (Denicolai et al., 2021). Due to their limited resources and vulnerability to external shocks, these SMEs face significant challenges in adapting to the diverse legal and socio-economic environments in
different countries (e.g., simultaneous working in developed and developing economies) (Zahoor et al., 2020).

Similarly, international collaborative strategies for SDG implementation across different actors and sectors remain an important area of research (Berrone et al., 2023). That is, exploring how firms can effectively collaborate with one another, NGOs, governmental bodies, and local communities (nationally or globally) to co-address multiple SDGs could offer insights into innovative partnership models and their impact on achieving sustainability goals (Ansell et al., 2022). Addressing these research gaps will contribute to a more comprehensive and nuanced understanding of the process and impact of contextualizing SDGs within the corporate realm, as well as provide actionable insights for managers, policymakers, and researchers.

We strongly encourage empirical submissions utilizing diverse methodologies, including quantitative, qualitative, or mixed-methods approaches. While conceptual/theoretical manuscripts are also welcome, they must provide substantial theoretical contributions.

Below are exemplary questions and areas for consideration, though submissions should not be limited to these:

**Strategic Integration**
- How do MNEs develop and leverage digital capabilities to create value across multiple dimensions of the SDGs?
- What are the theoretical underpinnings that can elucidate the ways in which DTs influence the strategic decisions and actions of MNEs, enabling them to create and capture value that contributes to the broader objectives of sustainable development?
- What are the strategic choices and actions that enable MNEs to integrate digitalization into their business models, structures, and culture for advancing the SDGs?
- What organizational adaptations, including changes in business models, structures, and corporate culture, are required for MNEs to align with a SDGs-oriented mindset and fully leverage digitalization to develop an economically-viable sustainable vision?
- How can DTs be deployed by MNEs to address individual SDGs while recognizing and benefiting from the complex interconnections between these goals, and what are the key mechanisms underlying such deployment?

**Tensions and trade-offs**
- How do DTs influence the interconnections and trade-offs among different SDGs, and how can MNEs manage them effectively?
- How can MNEs effectively balance their pursuit of value capture through digitalization with the imperative of sustainable value co-creation in the context of the SDGs, and what strategies can be employed to optimize this equilibrium?
- What are the ethical, legal, and regulatory challenges and opportunities that arise from the global integration of digitalization for the SDGs?
- How do MNEs foster innovation and experimentation while maintaining coherence and consistency among digital transformation components and SDG objectives?
- How do MNEs identify and strategically manage the unintended consequences of digital technology adoption for the SDGs?
How do MNEs leverage digital technologies to exploit natural resources and labor in developing countries, and what challenges does this pose to sustainable development efforts?

What strategies can MNEs and other internationalizing firms adopt to mitigate the dark side of DTs and ensure alignment with the various SDGs?

How can cross-sector collaboration be utilized to ensure that the benefits of digitalization are equitably distributed and aligned with the principles of sustainability and social responsibility outlined in the SDGs framework?

How can the transition from Industry 4.0 to Industry 5.0, emphasizing sustainability, human-centric values, and resilience, impact the tensions and trade-offs associated with digitalization in relation to the SDGs, and what strategies can organizations employ to align with this more holistic vision of industry and society?

How do lead MNEs orchestrate tasks in a digital environment where cooperative relationships extend beyond traditional industry boundaries, and what role does sustainability play in the coordination of resources with loosely connected actors in GVCs?

**Contextualizing the Digitalization-SDGs-Internationalization Nexus**

- What are the theoretical frameworks and empirical methods that can capture and measure the impact of digitalization on the SDGs at different levels of analysis (e.g., individual, organizational, societal)?
- How does the level of digitalization affect the alignment of global and local SDG strategies in multinational corporations? How do different institutional contexts (e.g., developed, emerging, and developing countries) influence this relationship?
- How does digitalization affect the market power of firms in different sectors and regions? What are the implications of this for achieving the SDGs, especially in terms of reducing inequalities, promoting innovation, and ensuring fair competition in the international domain?
- What are the main challenges and opportunities for internationalizing SMEs in implementing digitalization-SDG strategies across different regions? How do they cope with the institutional diversity and complexity in different legal and socio-economic environments? Will these questions be different to globally born firms?
- How can MNEs leverage DTs to enhance their strategic partnerships with NGOs, governmental bodies, and local communities?
- How does digitalization affect the measurement and reporting of SDG performance in MNEs? What are the benefits and challenges of using digital tools and platforms for SDG reporting? How can firms ensure the quality, reliability, and comparability of their SDG data?
- How can platform-based GVCs be designed to promote environmental sustainability and ethical labor practices throughout the value chain?
The Submission Process
The deadline for submission of manuscripts is 31st January 2025. Submissions will be accepted from 30 November 2024 via the IBR website: https://www.sciencedirect.com/journal/international-business-review/about/call-for-papers#digital-technologies-for-sustainable-international-business

Please consult the IBR Guide for Authors before submitting your manuscript and ensure you submit your manuscript for this Special Issue by ticking the appropriate box at the above site. Manuscripts will be double-blind reviewed following the standard IBR review procedure. For additional information, please contact: Omar Al-Tabbaa, busofoa@leeds.ac.uk

About the Guest Editors

Omar Al-Tabbaa is a Professor of International Business and Strategy, and Director of Research and Innovation at University of Leeds, UK. His research focuses on digitization, business model innovation, co-innovation, technology transfer, and sustainable development. His work has appeared in leading journals including Research Policy, British Journal of Management, Global Strategy Journal, International Business Review, Journal of International Management, and Journal of Business Research. He is a member of the Editorial Board of the Journal of Business Research, Asia Pacific Journal of Management, and a guest editor for the Multinational Business Review. https://business.leeds.ac.uk/departments-international-business/staff/1618/dr-omar-al-tabbaa

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