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Africa’s Digital Transformation and its Governance: The Long View

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Abstract

This introductory chapter sets the stage for an exploration of Africa's digital transformation and its governance. It synthesizes existing research, highlighting the challenges and opportunities within the continent's unique socio-economic and political contexts, conceptualizing digital transformation from both exogenous and endogenous perspectives. It frames key questions for Africa’s digital future, and outlines the contributions of the subsequent chapters in addressing critical dimensions of digital governance, economy, society, and the role of artificial intelligence in achieving Sustainable Development Goals. This chapter aims to foster a critical engagement with Africa's imperative to respond responsibly and boldly to these evolving digital conditions.

Keywords: Digital Transformation, Digital Governance, Digital Economy, Digital Society, Artificial Intelligence, Sustainable Development Goals

1. Introduction: Charting the Trajectory of Africa's Digital Imperative

Africa stands at a critical juncture in its developmental trajectory, driven by the accelerating forces of digital transformation. This evolving landscape, set against the backdrop of ambitious global targets like the UN Sustainable Development Goals (SDGs) articulated in 2015, presents both unparalleled opportunities and profound governance challenges. The 17 interconnected SDG goals were envisioned in 2015 to galvanise global resolve and action towards a more inclusive, equitable, and sustainable future for all (Sachs et al., 2020). Against this backdrop of ambitious global targets, digital transformation (DT) has emerged as a complex, critical developmental and governance juncture, particularly for the African continent, demanding new and

transdisciplinary attention. The escalating influence of the digital economy, as humanity progresses towards an increasingly digital society, presents significant opportunities interwoven with profound challenges, not least among them the backdrop of escalating global polycrises such as pandemics, climate change, and geopolitical instabilities.

A central theme woven throughout this volume is the urgent and complex challenge of governing this digital transformation. Our conceptualisation of governance aligns with Fukuyama's (2013) view, which defines it as a government's inherent ability to effectively make and enforce rules, and to consistently deliver essential services, irrespective of the specific democratic or non-democratic nature of that government. This definition is particularly salient to Africa's DT context because digital governance requires strong regulatory and service delivery capabilities. Furthermore, within the dynamic landscape of DT, a key outcome, indeed a foundational imperative, for any successful endeavour is ensuring that digital technologies and their associated systems remain resilient and sustainable over time. This dual focus on resilience and sustainability underscores these as critical objectives for all DT efforts. However, a noticeable lacuna exists within the prevailing academic and practitioner literature: it has only partially explored how various conceivable DT futures might lead to markedly different outcomes. This gap leaves a marked void in our understanding of how to achieve truly sustainable and resilient governance of DT initiatives, particularly within the often-rigid structures of hierarchical bureaucracies common in many developing countries. This understanding is not merely academic; it is acutely crucial for policymakers, government executives, researchers, and indeed all individuals involved in digital government decisions, especially in nations heavily reliant on external technology transfer, where established processes and power dynamics can easily stifle innovation or perpetuate dependencies.

The current global digital governance system faces a growing, albeit fragmented, consensus regarding its ill-preparedness to adequately address the multifaceted challenges posed by Society 5.0 – a societal model shaped by the pervasive and often disruptive advancements of digital technologies (Castells, 2011; Mergel et al., 2019). In response to this perceived inadequacy, a "control mechanism" anchored on the UN Global Digital Compact, frequently referred to as "digital diplomacy," has been proposed as a vital vehicle to navigate the inherent complexities of governing this nascent digital society. While the pressing need for a coherent, global-level structure for digital governance is undeniably clear, a palpable global fragmentation regarding a common vision for the digital society is increasingly evident. This divergence is often marked by distinct regional differences between major geopolitical powers, such as the USA and the EU, juxtaposed against the approaches of China and its allies. Amidst these high-stakes global discussions and evolving frameworks, Africa's voice on the precise shape, vision, and operationalisation of the digital society often remains muted,

or at best, insufficiently amplified. This silence persists despite the continent explicitly expressing its collective intentions and aspirations in foundational documents such as "The Digital Transformation Strategy for Africa (2020 – 2030)" (African Union, 2020). Moreover, it remains unclear whether the interpretive, legitimisation, and mobilisation activities undertaken by African actors have effectively enabled the continent to advance its position, safeguard its interests, and amplify its unique perspectives on the intricate global digital governance scene.

To effectively position the comprehensive scope and intended contribution of this book, it is imperative to first understand how Africa, from its own situated realities and historical experiences, conceptualises the complex dilemma of governance within the digital society. Given the current lack of in-depth understanding of the specific challenges and approaches to the dilemmas facing the African digital society, this volume seeks to navigate, from a systemic perspective, how current global digital governance challenges and opportunities can collectively form the foundational bedrock for crafting a robust and actionable "Digital Governance Strategy for the African Digital Society." The long-term viability and ultimate success of such a continent-wide strategy fundamentally necessitate an adaptive and cooperative approach to the governance of the African digital society. This recognises that such a strategy cannot, and indeed should not, be evolved in isolation from other global perspectives and conceptualisations; rather, it must engage with them critically, discerningly, and strategically.

Therefore, the overarching aim of this introductory chapter is to synthesise existing research on Africa's DT and its governance. Our synthesis prioritises outcomes intrinsically linked to sustainability and resilience, whilst simultaneously addressing the dynamics of cross-level policy implementation within the often-challenging context of hierarchical bureaucracies, particularly prevalent in developing countries. This approach allows us to frame the subsequent discussions in the volume within a coherent and strategically relevant narrative for Africa.

The remainder of this chapter is structured to provide a comprehensive roadmap for the reader's engagement with the book's core themes. We first conceptualise DT from an *exogenous* perspective, detailing its three key components: connectivity, content, and capacity – external forces that invariably shape the continent's digital landscape. Subsequently, we delve into an *endogenous* conceptualisation of DT, exploring how internal dynamics, historical legacies, and indigenous innovations contribute to Africa's unique digital trajectory. Finally, we frame what we view as the seminal "big questions" arising for Africa's DT and its governance. This foundational query serves as the intellectual pivot, connecting the volume's broad aspirations to the specific, insightful contributions of the subsequent chapters. We provide a detailed outline of these contributions, along with justifications of their relevance to the overarching themes. The

chapter concludes by extending an invitation to the readership to engage critically with the fundamental question of what Africa collectively needs to undertake to respond responsibly, boldly, and strategically to the imperative of navigating and shaping both these exogenous and endogenous digital conditions.

2. The Complexity of the Digital Society: An Exogenous Perspective

From an exogenous viewpoint, DT is fundamentally conceptualised as being driven by, and intricately comprising, three key components: connectivity, content, and capacity. These elements represent external forces, often global in origin and scope, that exert significant influence and shape the digital governance landscape across African nations. Understanding their dynamics is crucial for discerning how Africa participates in, and responds to, the global digital revolution.

2.1. Connectivity: The Foundation of the Network Society

Connectivity forms the bedrock upon which the entire edifice of the digital society is built. It is intrinsically linked to the concept of the 'Network Society,' as elaborated by Manuel Castells (2011), signifying the evolution towards a platform economy. In this paradigm, networks, rather than traditional hierarchies, become the fundamental organising principle of human activity, facilitated by ubiquitous digital communication infrastructures. In the African context, the prevailing narrative suggests significant and often impressive advancements in connectivity over the past two decades (although the International Telecommunication Union[1] reports that only 38% of Africa's population has access to the internet, it has been growing at 16.7% which is more than double the global average). This progress, however, has often occurred through non-traditional means, notably the meteoric growth of mobile rather than fixed-line networks. Mobile broadband has leapfrogged the need for extensive landline infrastructure, becoming the primary mode of internet access for millions across the continent. While this mobile-first phenomenon has rapidly expanded reach, it also presents its own set of challenges, including issues of affordability, quality of connection, and the digital divide between those with reliable access and those without. High data costs, particularly in comparison to income levels, remain a major barrier to meaningful connectivity for large segments of the population. Furthermore, the infrastructure development, while impressive, still faces gaps in rural and remote areas, contributing to geographical disparities in access. Despite the strides made, the dream of truly universal, affordable, and high-quality connectivity, enabling full participation in the network society, remains an ongoing endeavour.

[1] ITU (International Telecommunication Union) *State of digital development and trends in the Africa region: Challenges and opportunities*, 2025. https://www.itu.int/hub/publication/d-ind-sddt_afr-2025/

2.2. Capacity: Navigating Strategic Fragmentation and Technology Transfer

Capacity, in the context of DT, refers to the inherent ability of nations, institutions, and individuals to effectively manage, leverage, and innovate with digital technologies. This component raises critical and often uncomfortable questions about 'strategic fragmentation' and how the complex issues of technology transfer are addressed within such a dynamic and often uneven global environment. Strategic fragmentation, as discussed in the broader literature, describes the tendency for various digital initiatives or technology adoptions within an organisation or a nation to occur in a disjointed, siloed, or uncoordinated manner. In Africa, this can manifest as disparate digital projects lacking overarching strategic alignment, or as the uncritical adoption of technologies without sufficient local adaptation or capacity building. This phenomenon often perpetuates characteristics of dependency and exploitation, mirroring historical patterns seen during earlier industrial era developments where African nations remained consumers rather than producers of technology.

The struggle of formal institutions, such as universities, research centres, and established industries in Africa, to keep pace with the relentless march of global technological advancements and the shifting power structures of the digital economy is a critical concern. Unlike their counterparts in more developed economies, these institutions often lack the financial resources, the skilled human capital, and the robust innovation ecosystems necessary to develop, adapt, and deploy cutting-edge digital solutions. Consequently, Africa frequently finds itself at the receiving end of technology transfer, which, while beneficial in some respects, can embed dependencies on foreign intellectual property, software, and hardware. This can hinder the development of local digital industries, stifle indigenous innovation, and expose nations to vulnerabilities related to data sovereignty, cybersecurity, and technological lock-in. The challenge lies not merely in acquiring technology, but in building the endogenous capacity to critically evaluate, adapt, maintain, and ultimately innovate with these technologies, thereby moving beyond a consumerist stance to one of active digital agency and creation. The ongoing dialogue around digital sovereignty, as explored by Gagliardone and Stremlau (forthcoming), underscores this imperative for Africa to define its own terms of engagement with global digital powers.

2.3. Content: Disruptive Innovations and Indigenous Narratives

Content relates to the availability, generation, and consumption of digital information and services. This involves grappling with concepts such as 'Disruptive Innovations' (Christensen, 1997) and 'Creative Destruction' (Schumpeter, 1942), where new digital products, services, and business models fundamentally reshape existing industries and societal structures. Frameworks like Peter Diamandes' 6-Ds (digitization, deception, disruption, demonetization, dematerialization, and democratization) offer insightful perspectives on how technology makes products and services increasingly accessible

and affordable, leading to key societal shifts (Diamandis, 2012). In Africa, digital content is undeniably present and prolific, ranging from vibrant social media interactions to mobile money innovations and local e-commerce platforms. However, a crucial distinction often arises: much of this content tends to be more informal than formal.

Informal content includes user-generated material, culturally specific digital narratives, and grassroots innovations that often emerge organically from community needs, circumventing traditional formal channels or commercial structures. This informal content is a powerful testament to Africa's ingenuity and adaptability, often leveraging mobile platforms for communication, commerce, and creative expression. Yet, the challenge lies in formalising and monetising this content, integrating it into broader economic structures, and ensuring its sustainable development. Formal content, on the other hand, refers to institutionally produced information, structured digital services (e.g., e-government portals, formal education platforms), and commercially viable digital products. The struggle to create, disseminate, and manage formal content that is relevant, accessible, and high-quality across diverse linguistic and cultural contexts remains a significant hurdle. This includes the digitisation of public records, the development of localised educational materials, and the creation of digital services that genuinely meet the specific needs of African populations, rather than simply replicating models from elsewhere. Bridging the gap between informal vibrancy and formal robustness is key to unlocking the full potential of content for Africa's DT.

2.4. Synthesis: A Function of Exogenous Factors

A heuristic formulation for understanding the complex and dynamic state of Digital Governance can be expressed as a function of these exogenous factors over time:

State of Digital Governance = F(Connectivity,Content,Capacity;Time)

The **State of Digital Governance** here is expressed as a **Function** of three key factors (**Connectivity**, **Content** And **Capacity**) that are constantly changing over **Time**. This formulation underscores the dynamic interplay of these elements, where the effectiveness and evolution of digital governance are not static but are continuously shaped by the developments in connectivity, the nature and accessibility of digital content, and the inherent capacity of the ecosystem to manage and leverage these. This dynamic relationship gives rise to several critical questions for consideration in the African context:

Firstly, why, despite undeniable progress in connectivity – especially mobile connectivity – do challenges persist in harnessing capacity and formalising content in ways comparable to more developed nations? This question points to deeper structural issues that transcend mere infrastructural provision, touching upon educational

systems, regulatory environments, and investment climates that might impede the full realisation of digital dividends.

Secondly, how can the prevalent characteristics of dependency and potential exploitation, often embedded in technology transfer mechanisms, be effectively mitigated? Furthermore, what new opportunities might arise from Africa's unique, often leapfrogging, digital evolution that could redefine the terms of engagement with global tech powers? This delves into strategies for fostering indigenous innovation, promoting local ownership of data, and building resilient domestic digital ecosystems.

Thirdly, how do these dynamics – the interplay of connectivity, content, and capacity – differentiate across various countries and segments of society within Africa? This includes examining disparities between low-income countries (LICs) versus middle-income countries (MICs), the experiences of poor populations, those in rural and remote communities, or specific demographics such as the elderly, disabled individuals, and gendered groups. Understanding these differentiations is crucial for developing context-specific policies that address particular vulnerabilities and maximise opportunities for all.

The exogenous shift, driven by global digital forces and trends, undeniably leads to a fundamental endogenous shift within African societies. This necessitates a deeper and more introspective examination of Africa's internal responses, adaptive strategies, and envisioned futures for its DT.

3. Africa's Digital Transformation Futures: The Endogenous View and the Digital Transformation Matrix

The endogenous view of Africa's DT compels a deeper and more introspective consideration of potential futures within the continent's specific and often challenging context. This perspective is particularly crucial for long-range strategic thinking about DT in Africa, acknowledging and addressing historical challenges such as instances of weak leadership, fragile institutions, and pervasive socio-economic inequalities. The endogenous lens asks how Africa, from within its own unique historical and contemporary realities, is shaping, or being shaped by, the digital revolution. It moves beyond merely observing external technological trends to understand how internal dynamics, choices, and indigenous innovations contribute to the continent's unique digital trajectory.

From this endogenous viewpoint, the 2x2 matrix of "Alternative Digital Transformation Futures" scenarios offers a relevant analytical tool (see Figure 1). The matrix positions societies along two key axes of policy and management models, framing four distinct digital futures.

The vertical axis of the matrix distinguishes between a "Dominance of proactive system-building public policy regime" at the top and a "Dominance of neoliberal laissez-faire public policy regime" at the bottom. This axis speaks to the degree of state intervention, strategic planning, and regulatory oversight in shaping the digital landscape. A proactive system-building approach implies deliberate government efforts to steer digital development, build public infrastructure, and implement comprehensive regulatory frameworks. Conversely, a neoliberal laissez-faire approach suggests minimal state intervention, relying predominantly on market forces to drive DT.

The horizontal axis contrasts the "Dominance of Business Process management model" on the left with the "Dominance of Community-and-Collaboration management model" on the right. This axis reflects the prevalent approach to managing digital initiatives and fostering innovation. A Business Process management model emphasizes efficiency, standardization, and top-down control, often within corporate or large bureaucratic structures. In contrast, a Community-and-Collaboration management model prioritises decentralised, participatory, and networked approaches, driven by collective action and grassroots innovation.

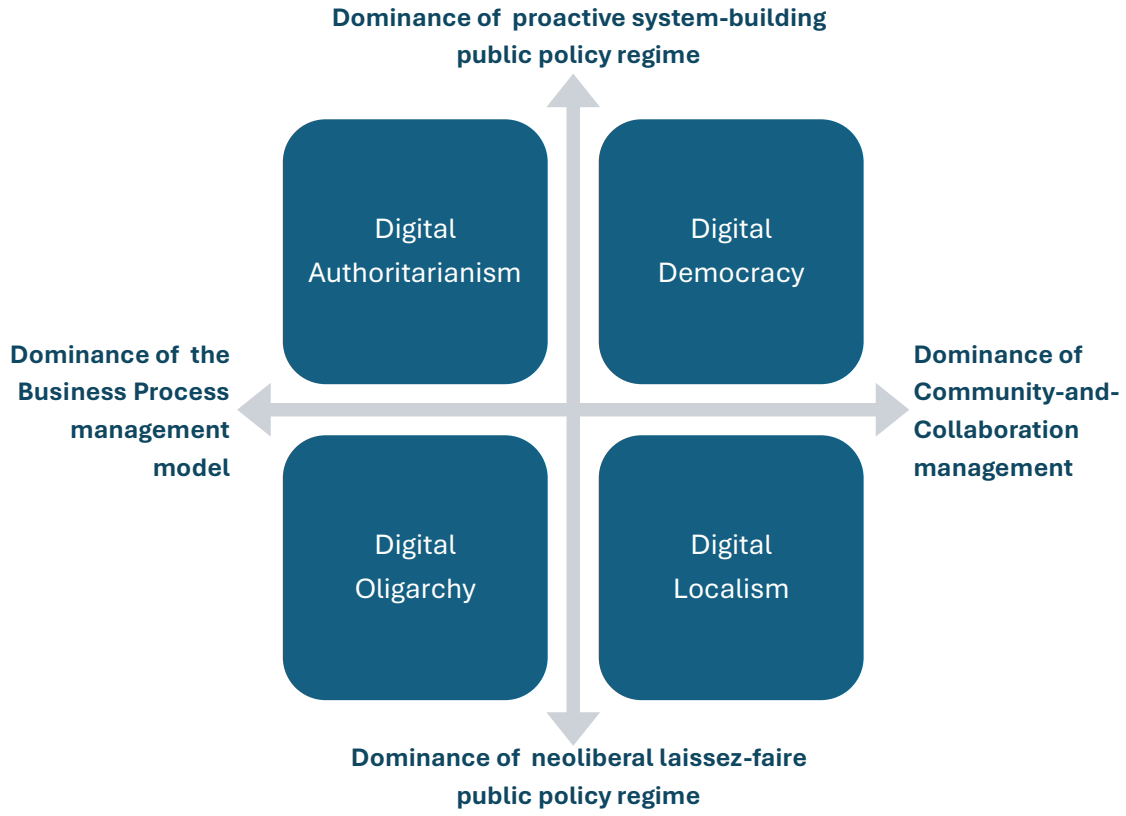


Figure 1: Alternative Digital transformation futures (Source: Zlatko Bodrozic, 2024)

Intersecting these two axes, the matrix delineates four potential "Alternative Digital Transformation Futures":

1. **Digital Authoritarianism (Top-Left Quadrant):** This quadrant arises from the combination of a proactive system-building public policy regime and a dominance of the Business Process management model. In this future, the state plays a strong, centralised role in directing DT, often leveraging technology for surveillance, control, and top-down management of society and the economy. While potentially efficient in some respects, this model carries huge risks for civil liberties, data privacy, and democratic participation. Given the historical context of state fragility and governance challenges in parts of Africa, the temptation for strong state control over digital spaces could lead to outcomes leaning towards this quadrant.
2. **Digital Oligarchy (Bottom-Left Quadrant):** This quadrant results from a neoliberal laissez-faire public policy regime coupled with a dominance of the Business Process management model. In this scenario, digital power is concentrated in the hands of a few powerful private corporations (both global and local), with minimal state oversight. These entities leverage digital technologies for commercial gain, potentially leading to increased data extraction without equitable benefit, deepened existing inequalities, and an undermining of public interest and democratic principles. For many African nations, which are often "client states" for external digital agendas and face challenges in regulating powerful multinational corporations, the risk of gravitating towards this digital oligarchy is particularly pertinent. This is a future Africa must actively strive to avoid.
3. **Digital Localism (Bottom-Right Quadrant):** This quadrant is characterised by a neoliberal laissez-faire public policy regime alongside a dominance of the Community-and-Collaboration management model. In this future, digital development is largely driven by decentralised, community-led initiatives, with minimal central government intervention. While fostering local innovation and autonomy, this model might struggle with scalability, interoperability, and addressing continent-wide challenges or ensuring universal access due to a lack of coordinated public policy or robust national infrastructure.
4. **Digital Democracy (Top-Right Quadrant):** This quadrant represents the most desirable of the futures, emerging from a proactive system-building public policy regime combined with a dominance of the Community-and-Collaboration management model. Here, the state actively steers digital development, but does so in a way that empowers citizens, fosters collaboration, promotes open data, and strengthens democratic institutions. Digital technologies are used to enhance transparency, facilitate equitable access to information and services, and enable inclusive economic growth and robust civic participation. This quadrant aligns strongly with the aspirations of the SDGs and the broader

objectives of equitable and sustainable development for all segments of society, and is the aspirational trajectory for Africa.

The crucial question for Africa, therefore, becomes: Where does the continent currently sit on this DT matrix? And, more importantly, how can it proactively optimise its trajectory towards achieving the "Digital Democracy" quadrant, moving decisively away from the perils of "Digital Oligarchy"? The journey towards digital democracy requires deliberate policy choices and concerted efforts to build inclusive digital ecosystems. This involves fostering digital literacy, promoting open data initiatives, establishing robust data governance frameworks that protect privacy and ensure data sovereignty, and strengthening independent regulatory bodies. It also necessitates addressing the underlying socio-economic inequalities that can be exacerbated by digital exclusion, ensuring that the benefits of DT are widely distributed.

Furthermore, the endogenous view compels an examination of existing examples of differentiation between countries and various parts of society across Africa. Are there discernible variations in approaches to DT and its governance that offer insights into different development pathways or best practices? Similarly, how do poor populations, rural and remote communities, or specific demographic segments (such as the elderly, disabled individuals, or gendered groups) experience and engage with DT differently? The experiences of these diverse groups provide crucial insights into the effectiveness of current strategies and highlight areas where tailored interventions are needed. For example, the success of mobile money in East Africa (Khambule & Maciko, forthcoming) provides an endogenous model of financial inclusion that emerged from specific socio-economic needs and technological availabilities, demonstrating a pathway different from traditional banking systems. Conversely, the challenges of reliable electricity in South Africa (Magida, forthcoming) illustrate how foundational endogenous factors can impede digital progress despite national policy efforts.

The endogenous perspective thus serves as a powerful reminder that Africa's DT is not merely a reflection of global trends but a dynamic process shaped by internal conditions, historical legacies, and the agency of its diverse peoples and institutions. The subsequent chapters in this volume aim to elucidate these complex endogenous dynamics, providing rich empirical and conceptual insights that will inform a more nuanced understanding of Africa's digital futures.

4. Governance of Digital Transformation: Emerging Lessons and Global Intersections

Understanding the governance of DT in Africa necessitates starting with a comprehensive view of global governance issues. While global digital governance is a complex and evolving domain, it impacts and is impacted by regional and national

efforts. The essence of this global landscape lies in depicting the intricate web of challenges and opportunities that arise at the international level concerning digital technologies, data flows, cybersecurity, and platform regulation. As noted earlier, the global digital governance system faces a growing consensus regarding its ill-preparedness to address the challenges of Society 5.0, a societal model shaped by pervasive digital advancements (UN Global Digital Compact, 2024).

The proposed "control mechanism" anchored on the UN Global Digital Compact, often framed as "digital diplomacy," represents a concerted effort to establish shared principles and norms for governing the digital society. However, the reality is one of substantial global fragmentation regarding a common vision for this digital future. Regional differences are stark, notably between the approaches championed by major Western powers like the USA and the EU, which often emphasise market-driven innovation tempered by human rights and data privacy, versus the models pursued by China and its allies, which tend to prioritise state control, data sovereignty, and technological self-reliance (Gagliardone & Stremlau, forthcoming). Navigating this fractured global landscape requires African nations to develop sophisticated diplomatic capabilities and a clear, unified stance to safeguard their interests and promote their developmental aspirations.

In informing this critical discussion, useful reference information can be drawn from the latest African publications and policy documents. These include continent-wide strategies, such as the African Union's Digital Transformation Strategy for Africa (2020-2030), as well as national digital policies and regulations from leading African digital economies. Such documents often articulate the continent's ambitions for digital inclusion, economic diversification, and leveraging technology for sustainable development (African Union, 2020). Furthermore, instructive country case studies from within Africa provide valuable empirical insights into the successes, failures, and adaptive strategies employed in diverse national contexts. These case studies can illuminate practical lessons regarding policy implementation, technological adoption, and citizen engagement.

Beyond continent-specific sources, insights from major international forums are indispensable. Platforms such as the G20, alongside numerous technology-specific collectives and convenings , collectively highlight the multifaceted nature of digital governance in a rapidly evolving global landscape. These forums serve as arenas where global norms are debated, technological standards are negotiated, and strategic alliances are forged. Africa's active and informed participation in these spaces is paramount to ensure that its voice is heard, its unique challenges are acknowledged, and its perspectives on equitable digital governance are integrated into global frameworks. This includes advocating for fair technology transfer mechanisms,

equitable data governance principles, and frameworks that support, rather than hinder, local digital innovation and entrepreneurship.

The lessons emerging from this comprehensive view of digital governance, both global and African, underscore a critical imperative: African nations must move beyond simply reacting to externally imposed digital realities. They must proactively shape their own digital destinies through adaptive, cooperative, and strategically informed engagement with the global digital order. This involves a continuous process of learning, adapting, and innovating, ensuring that DT serves as a catalyst for genuine development and empowerment, rather than perpetuating new forms of dependency or exclusion.

5. Big Questions for Africa's Digital Transformation & its Governance: Contributions from the Volume

To address the complexities associated with Society 5.0 in the unique African context, this volume proposes and embodies a systemic approach to DT and its governance. This involves drawing holistic insights from various interconnected dimensions, particularly through the lens of Quadruple Helix actors. This framework, an extension of the Triple Helix model, encompasses the crucial interplay between government, academia, industry, and civil society, recognising that effective DT is a collaborative endeavour that transcends traditional sectoral boundaries. The future digital governance system for Africa, as envisioned and explored throughout this book, is potentially regional in scope, characterised by the emergence of a **capable state**, fostering a thriving **digital economy system**, and propelled by the active participation and innovation of **civic tech and govtech initiatives** (Onyango & Karuri-Sebina, 2024). The subsequent chapters in this collection are dedicated to contributing useful explorations of these "big questions" by delving into specific, yet interconnected, facets of Africa's DT and governance.

5.1. Societal Drivers: Unpacking the Human Element of Digital Change

The initial section of the book critically examines the fundamental societal drivers that influence Africa's DT, highlighting the human and social dimensions often overshadowed by technological advancements.

Chapter 2, authored by Magida, delves into the multidimensional nature of the digital divide in South Africa, moving beyond a simplistic binary of "haves" and "have-nots" to emphasise the intricate disparities between privileged and underprivileged groups. The chapter explores micro and macro drivers of digital exclusion, detailing the first level of the digital divide (access to digital infrastructure), the second level (digital literacy, skills, and effective usage), and the third level (the ability to translate digital engagement into tangible socio-economic outcomes and benefits). Magida's compelling analysis reveals that fundamental elements such as robust infrastructure, the prohibitive cost of data, issues of overall affordability, and the unreliable supply of

electricity (a persistent challenge in South Africa, particularly due to load-shedding) are key contributing factors perpetuating this digital divide. The chapter underscores the urgent need for comprehensive, context-specific strategies that address these interwoven challenges to foster genuine digital inclusion across all segments of society. Its relevance lies in foregrounding the foundational socio-economic hurdles that must be overcome for any meaningful DT to take root and flourish.

Chapter 3, by Mayayise, zeroes in on the crucial aspect of digital government adoption across Africa, systematically investigating the multifaceted factors influencing its successful implementation. The chapter traces the conceptual evolution from traditional e-government initiatives to the more holistic paradigm of digital government, underscoring its potential benefits, including improved administrative efficiency, enhanced transparency in public service delivery, and greater citizen engagement, all of which directly align with the broader aspirations of the UN SDGs. Mayayise identifies unique socio-economic, infrastructural, and cultural challenges inherent to the African context that often impede digital government initiatives. Crucially, the chapter proposes actionable strategies to overcome these barriers, categorising the influencing factors into Technology, Socioeconomic conditions, Process design, People (human capacity and digital literacy), Leadership (political will and vision), and Legislation (enabling policy and regulatory frameworks). A noteworthy observation highlighted by Mayayise is the scarcity of recent empirical studies in this vital area for Africa, signalling a critical research gap that needs urgent attention to inform evidence-based policy-making. This chapter is vital for understanding the practicalities and pitfalls of transforming public administration in Africa.

Chapter 4, jointly authored by Gagliardone and Stremlau, ventures into the increasing global trend of leveraging Artificial Intelligence (AI) to tackle complex challenges, examining this phenomenon through an African lens. Their chapter specifically explores how the burgeoning resistance of various actors within Africa can serve as a powerful catalyst for informing better, more locally grounded policymaking concerning the pervasive influence of Big Tech companies. Gagliardone and Stremlau argue persuasively that the contestations emanating from Africa, often overlooked in global discourse, hold global significance. These African challenges, ranging from ethical labour practices to data sovereignty, are effectively forcing large tech companies to confront the true economic, political, and social costs of their seemingly frictionless global operations. Simultaneously, their analysis reveals a nascent yet undeniable confidence and willingness within Africa to actively redefine its position and assert its agency in the complex global digital landscape, challenging existing power asymmetries. This chapter is critical for understanding the geopolitical dimensions of DT and Africa's emerging role in shaping global digital governance norms.

5.2. Technological Trends: Shaping the Digital Frontier

This section pivots to explore the specific technological trends that are shaping Africa's digital frontier, examining their application, implications, and the unique governance challenges they present.

Chapter 5, by Maseko, provides an incisive discussion on the critical role of digital technologies in ensuring free and fair elections, drawing invaluable lessons from South Africa's pivotal 2021 local government elections. The chapter focuses particularly on the deployment and impact of Voter Management Devices (VMDs), assessing their effectiveness in enhancing electoral integrity. Situating this discussion within broader debates on digital democracy, Maseko also examines the inherent risks of censorship and manipulation that digital tools can introduce, especially within semi-authoritarian contexts or in environments with fragile democratic institutions. By contributing to the global discourse on digital electoral reform, this chapter underscores the dual nature of technology in democratic processes: a powerful enabler of transparency and efficiency, yet also a potential conduit for control and subversion. Its relevance lies in providing a pragmatic assessment of technological interventions in a core democratic function.

Chapter 6, by Khambule and Maciko, undertakes a cross-country analysis of Fintech development within three key BRICS nations: China, India, and South Africa, with the explicit aim of interrogating shared policy imperatives and divergent approaches. The chapter extensively explores Fintech's disruptive potential as a transformative solution to pervasive financial exclusion, offering innovative pathways for bringing previously unbanked populations into the formal financial system. Crucially, Khambule and Maciko recommend that BRICS countries collaborate to develop multilateral policies that can effectively deepen Fintech evolution both within and across their respective economies, thereby influencing the broader global digital governance structure. This contribution highlights the potential for South-South cooperation to shape inclusive financial digital ecosystems.

Chapter 7, jointly authored by Khalifa and Mahleza, delves into the intricate legal landscape of South Africa, specifically analysing whether the nation's Competition Act contains sufficient tools for the effective detection and regulation of tacit algorithmic collusion. This form of collusion, where algorithms learn to coordinate market behaviour without explicit human agreement, poses a significant challenge to traditional antitrust frameworks. The authors critically conclude that the existing legislative tools are currently insufficient to adequately address these complex digital phenomena, necessitating further action. Their chapter identifies key gaps in current regulations and passionately advocates for strategic investment in new technologies and regulatory capacities designed to accurately diagnose and predict algorithmic market behaviour. This chapter is vital for understanding the cutting-edge legal challenges posed by advanced digital technologies in the economic sphere.

Chapter 8, by Mangundu, brings into sharp focus the growing importance and transformative potential of drone technology for healthcare services across Africa. The chapter determines the current state of, and readiness for, drone technology governance within the African context, alongside a comprehensive review of present drone regulatory mechanisms and the inherent challenges encountered in African public healthcare systems. Mangundu concludes that while the promise of drones in logistics and medical delivery is immense, there is a compelling need for more empirical research in this nascent area to inform robust policy. To this end, the chapter proposes a practical governance framework tailored to the specific needs and challenges of African healthcare. This contribution offers a forward-looking perspective on how emerging technologies can leapfrog traditional developmental hurdles.

5.3. Digital Governance Strategies / Methodologies: Crafting the Future

The final section of the book synthesises various digital governance strategies and methodologies, offering insights into how Africa can craft effective policies and approaches for its digital future.

Chapter 9, by Pule, Chirau, and Masvaure, provides a detailed examination of how the African Parliamentary Oversight Tool (African POT) is poised to help transform traditional analogue government systems into more agile and responsive digital systems. The authors focus particularly on the tool's immense potential for strengthening evidence-based decision-making within African parliaments, thereby enhancing legislative effectiveness and accountability. While assenting to the inherent challenges in adopting and integrating such a transformative tool, including technological divides and resistance to change, they offer pragmatic recommendations. These include targeted efforts to tackle existing technological divides, enhance user training and digital literacy among parliamentarians and staff, and fostering a pervasive culture of digital innovation within parliamentary institutions. This chapter is crucial for understanding how digital tools can strengthen democratic oversight and legislative processes.

Chapter 10, by Govender and Zhou, highlights the transformative potential of emerging technologies in radically enhancing efficiency in public service processes. Their chapter advocates for a crucial paradigm shift away from a narrow perspective of data responsibility, which traditionally focuses solely on ethics and privacy, towards a more expansive and holistic approach. This broader perspective prioritises people and power dynamics within data ecosystems, actively seeking to refine and expand existing data practices. It champions a vision where robust data governance structures permeate all sectors and entities, extending even to grassroots initiatives, ensuring that data serves collective well-being rather than merely commercial or governmental interests. This contribution is essential for designing data governance frameworks that are ethical, inclusive, and equitable in the African context.

Chapter 11, authored by Ndaka, provides a critical discussion on how different governments are anticipating and responding to Artificial Intelligence (AI) technologies, paying particular attention to how this anticipation fundamentally relates to the framing and, often, reframing of public policies. Ndaka compellingly argues for a reorientation of policy attention from an unfettered pursuit of technological growth to a more critical questioning of how the accumulation of power, information, and financial gain within AI ecosystems is achieved, particularly by powerful global technology actors. This analysis highlights how such accumulations can often occur to the detriment of African regions, potentially exacerbating existing inequalities and dependencies. The chapter advocates for a more cautious, context-sensitive, and rights-based approach to AI policy that prioritises African agency and equitable outcomes. Its significance lies in challenging techno-deterministic views and urging for a human-centred approach to AI governance.

Chapter 12, by Twinomurinzi, offers a critical examination of Africa’s DT and governance through a distinct 'post-digital' lens. This perspective fundamentally shifts the focus from viewing digital technologies as external novelties to understanding how they are already deeply embedded and inextricably intertwined within the continent's socio-economic and political systems. The chapter addresses the uneven distribution of digital governance research and resources across Africa, highlighting key areas where more attention is needed, such as robust policy and regulation, comprehensive cybersecurity measures, transparent algorithmic oversight, and strategic technology integration that is aligned with national development goals. Twinomurinzi's contribution strongly emphasises the imperative for adaptive, culturally relevant, and human-centered approaches to digital governance that resonate with Africa’s unique contexts and challenges. This chapter provides a vital conceptual framework for understanding the pervasive nature of digitalisation on the continent.

Chapter 13, authored by Ouma, delves into the rapidly evolving landscape of intellectual property (IP) within the context of Africa's accelerating DT. The chapter highlights how emerging IP trends, driven by new digital assets like AI-generated works, Non-Fungible Tokens (NFTs), and Big Data, contribute to the creation of intellectual capital and shape economic opportunities. Through a meticulous literature-based desk study, Ouma analyses the complex legal, policy, and strategic considerations necessary to effectively govern and protect these new digital assets. The chapter explores how collaborative initiatives and updated governance structures can adeptly address the intricate IP complexities within the digital economy, ultimately aiming to support innovation and foster sustainable socio-economic development across Africa. This contribution speaks to safeguarding Africa's creative and innovative output in the digital age.

Chapter 14, by Plantinga, poses a critical and timely question: What is the actual capacity and legitimate authority of the South African state to effectively govern and

genuinely support a competitive and inclusive digital economy? While recent policy discourse in South Africa has rightly highlighted the importance of industrial policy and state-led innovation as drivers of economic development, Plantinga's chapter shifts focus to the often-overlooked organizational and individual capabilities within the public sector. He argues that these internal capacities are fundamentally needed to design and implement effective digital economy strategies. The chapter provides a understanding of how state institutions in developing contexts like South Africa can adapt, build, and sustain the necessary internal capacity for robust DT. Its relevance lies in addressing the crucial, yet often neglected, aspect of internal state readiness for governing the digital economy.

These diverse and insightful contributions collectively address the overarching "Big Questions" for Africa's Digital Transformation and its Governance, providing a comprehensive and multi-faceted perspective on the challenges, opportunities, and strategic imperatives facing the continent. From the foundational issues of connectivity and capacity to the cutting-edge implications of AI and algorithmic governance, the volume offers a rich tapestry of analysis, grounded in African realities and informed by global trends.

6. Conclusion: A Call to Action for Africa's Digital Renaissance

This introductory chapter has laid the groundwork for a critical and comprehensive examination of Africa's DT and its governance. By systematically exploring both the exogenous forces (connectivity, content, capacity) and the endogenous conditions (historical legacies, institutional capacities, socio-economic realities) that significantly shape the continent's digital future, and by outlining the diverse and intersecting contributions of the subsequent chapters, this volume seeks to provide a useful understanding of this complex and rapidly evolving landscape.

The book extends an invitation to its readership – policymakers, researchers, practitioners, and citizens alike – to engage critically and constructively with the fundamental question of what Africa collectively needs to undertake to respond responsibly, boldly, and strategically to the imperative of navigating and shaping both these exogenous and endogenous digital conditions. It is through such rigorous critical engagement, intellectual honesty, and concerted collective action that truly meaningful conclusions, impactful implications, and transformative recommendations for Africa's digital future can be forged. This volume aims not just to inform, but to inspire a proactive and visionary approach, ensuring that Africa's digital journey is one of empowerment, inclusion, and self-determination, leading to a digital renaissance for the continent.

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