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Ownership and Control of Information and Communication Technologies: Implications for Business Sustainability in Developing and Emerging Economies

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Abstract

Information and Communication Technologies (ICTs) have become foundational to economic development, business transformation, and global integration. However, in developing and emerging economies, the ownership and governance structures of ICT resources ranging from telecommunications infrastructure to digital platforms and data ecosystems are often highly concentrated. This structural concentration influences who benefits from digital transformation and who is excluded. This paper provides a comprehensive examination of how ICT ownership and control affect business sustainability across economic, social, environmental, and institutional dimensions in developing regions. Using interdisciplinary literature, theoretical models, and cross-regional trends, the study argues that unequal control of ICT infrastructure reinforces dependency, limits local value capture, accelerates environmental vulnerabilities, and exacerbates digital inequalities. The paper concludes with an extensive set of policy recommendations aimed at enabling inclusive ICT governance, building local capacity, advancing digital sovereignty, and promoting environmentally responsible digital growth.

Keywords: ICT governance, digital inequality, business sustainability, developing economies, ICT ownership, digital transformation

Introduction

Information and Communication Technologies (ICTs) are central to modern economies, functioning as catalysts for productivity, innovation, and global integration. Over the past two decades, the digitalization of business processes has

become a key determinant of competitiveness, market access, and economic resilience (Bahrini & Qaffas, 2019; Dedrick et al., 2013). For emerging and developing economies, ICTs present powerful opportunities to leapfrog developmental barriers, integrate into global markets, and develop new forms of entrepreneurship (UNCTAD, 2021; World Bank, 2020).

Yet the digital landscape in many developing economies is shaped not only by access to technology but also by the pattern of ownership and control of ICT infrastructure. Ownership of telecommunication networks, digital platforms, cloud computing services, and data repositories remains heavily concentrated among foreign technology firms, multinational telecom corporations, or domestic oligopolies (Souter, 2019; Srnicek, 2017; Couldry & Mejias, 2019). These ownership structures shape the ability of local firms to participate meaningfully in digital markets, negotiate fair digital value chains, and develop sustainable business models (Moyo, 2022; Duncombe & Heeks, 2002).

The central question guiding this paper is: How do ownership and control of ICTs shape business sustainability in developing and emerging economies? To address this question, the paper adopts a multi-dimensional approach examining ICT ownership from economic, environmental, institutional, and social perspectives.

ICT as an Engine of Economic Development

ICTs are widely regarded as engines of economic growth. They enhance productivity, improve communication efficiency, and enable automation of business operations. Numerous studies link ICT diffusion to economic expansion and improved business performance in developing regions (Dedrick et al., 2013; UNCTAD, 2021). ICTs facilitate participation in global value chains by reducing information asymmetries, enabling digital payment systems, and expanding market reach.

However, economic benefits often depend on access to and control over ICT infrastructure. Where ownership is limited or concentrated, economic gains accrue disproportionately to dominant actors, limiting the potential for local businesses to scale (Souter, 2019).

Barriers to ICT Adoption Among SMEs

Small and medium enterprises (SMEs) are considered the backbone of most developing economies, yet they face multiple obstacles in leveraging ICT effectively.

Even when SMEs adopt digital tools, lack of control over digital platforms often restricts their ability to capture value, especially when global platforms control pricing algorithms and access to customer data (Srnicek, 2017).

Environmental Impacts of ICT

ICT contributes to sustainable environmental outcomes through dematerialization and optimizing energy use. However, environmental costs associated with ICT infrastructure such as e-waste and high energy consumption pose significant sustainability challenges (Hilty & Aebischer, 2015). Developing economies often lack proper e-waste management systems, exacerbating pollution and health risks.

ICT Ownership and Power Dynamics

ICT ownership patterns shape the distribution of digital power. Global technology firms increasingly dominate data flows, platform economies, and cloud infrastructure, raising concerns about digital dependency in less industrialized countries (Couldry & Mejias, 2019). Such dependencies influence national autonomy and business competitiveness.

Theoretical Framework

Resource-Based View (RBV)

The RBV posits that ownership and control of strategic resources such as ICT infrastructure enable firms to achieve competitive advantage (Barney, 1991). In developing economies, inability to own or control ICT resources limits local businesses' strategic potential and locks them into subordinate roles within digital markets.

Institutional Theory

Institutions determine the "rules of the game" (North, 1990). Weak institutions encourage monopolistic practices, inadequate regulation, and lack of transparency in ICT ownership. Effective institutions can promote competition, fair pricing, and equitable access to ICT.

Sustainability Theory

The sustainability paradigm emphasizes balancing economic growth with social inclusion and environmental protection (Elkington, 1998). ICT ownership affects:

Dependency and World-Systems Theory

Dependency theory explains how structural inequalities shape technological and economic relationships between developed and developing economies (Dos Santos, 1970). ICT ownership concentration parallels historical patterns of economic dependency, reinforcing unequal exchange and limiting local value creation.

Methodology

This study employs an integrative literature review, a methodology suited for synthesizing knowledge across theoretical, empirical, and policy-oriented research (Torraco, 2016). The goal is to identify patterns, themes, and research gaps in sustainability practices within emerging economies.

Concentration of Telecom Infrastructure

Across Africa, Asia, and Latin America, telecom networks are dominated by a few multinational operators who control licensing, pricing, and data flows. This concentration raises concerns about affordability, accessibility, and digital sovereignty (Souter, 2019).

Platform Capitalism and Gatekeeping

Digital platforms have evolved into gatekeepers of commerce, mobility, communication, and finance (Srnicek, 2017). Businesses relying on these platforms often lose control of:

Customer relationships, Pricing mechanisms, Brand visibility, Valuable user-generated data.

Cloud Dependency

Most developing economies depend on foreign-owned cloud services due to limited domestic infrastructure. This dependence exposes businesses to cybersecurity risks and limits local data governance (UNCTAD, 2021).

Cross-Border Data Flows

Data extracted from local users and businesses is often stored and analyzed in foreign jurisdictions, raising issues of; Privacy, National security and Economic value extraction.

Skills and Capacity Gaps

Low digital literacy and limited advanced ICT skills prevent local businesses from engaging in higher-value digital activities, reinforcing dependency (World Bank, 2020).

Economic Implications

When ICT ownership is concentrated, local enterprises face barriers to innovation, higher costs of digital services, and limited access to data-driven insights (UNCTAD, 2021). This undermines competitiveness, particularly for SMEs.

Environmental Sustainability

Without green ICT policies, increased digital infrastructure contributes to pollution and energy use. Sustainable business models require eco-friendly ICT investments (Hilty & Aebischer, 2015).

Social Inclusion

Unequal ICT ownership may worsen digital divides, excluding women, rural populations, and smaller businesses from benefiting fully from digital transformation (GSMA, 2020).

Institutional and Governance Implications

Strong institutions are essential for fair competition, consumer protection, and data governance. Weak governance allows dominant actors to shape digital markets in ways that disadvantage smaller firms (Souter, 2019).

Recommendations

Promote Inclusive ICT Ownership

Governments can broaden digital participation by supporting local ICT firms, encouraging cooperative infrastructure models, and facilitating public–private partnerships.

Strengthen Digital Sovereignty and Data Governance

Developing economies should adopt policies promoting data protection, fair competition, and local participation in digital markets (UNCTAD, 2021).

Encourage Sustainable ICT Development

Environmental sustainability requires renewable energy use, responsible e-waste management, and energy-efficient ICT infrastructure.

Build Institutional and Regulatory Capacity

Effective regulation promotes competition, transparency, and responsible ICT investment.

Improve Digital Skills

National digital literacy programs and SME-focused training can reduce dependency and improve business resilience.

Conclusion

ICT ownership and control critically influence business sustainability in developing and emerging economies. Concentrated control restricts innovation, exacerbates dependency, and limits value capture for local enterprises. Sustainable digital transformation requires inclusive ownership models, strong governance, environmental responsibility, and comprehensive human capacity development. Only through equitable distribution of ICT resources can developing economies build resilient and sustainable business ecosystems.

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