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The deepening digital divide: Inequality in the information society

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Abstract

The rapid evolution of Information Technology (IT) has fundamentally reshaped societies globally, yet it has also exacerbated existing inequalities, particularly in developing nations. This paper explores the implications of IT's evolution on social, economic, and educational disparities, focusing on how access to technology influences opportunities and outcomes. Through an analysis of data and case studies from various regions, we aim to highlight the need for targeted policies that address these inequalities and promote a more inclusive information society.

Keywords: Digital Divide; Information; Society; Inequalities; Digital Literacy

1. Introduction

The evolution of IT over the past few decades has transformed communication, commerce, education, and governance. However, the benefits of these advancements are not uniformly distributed. This paper examines the deepening divide in the information society, focusing on how disparities in access to IT exacerbate social and economic inequalities, particularly in developing nations. The researcher argues that understanding these dynamics is essential for creating equitable opportunities for all citizens in matters technology and information access.

Early Computing (1940s-1960s): Mainframes: Large, expensive computers primarily used by governments and corporations for complex calculations. Key Innovations: Introduction of programming languages, operating systems, and the concept of time-sharing.

Personal Computing (1970s-1980s): Microprocessors: The development of affordable microprocessors led to the creation of personal computers (PCs). Software Revolution: Emergence of user-friendly software applications and graphical user interfaces (GUIs), making computers accessible to the general public.

Networking and the Internet (1990s): Internet Protocols: Standardization of TCP/IP protocols enabled diverse networks to connect, leading to the growth of the internet. World Wide Web: The creation of web browsers transformed how information was shared, making the internet a global platform for communication and commerce.

Mobile Technologies (2000s-Present): Smartphones: The introduction of smartphones revolutionized communication, providing access to the internet, apps, and social media on-the-go. Cloud Computing: Enabled data storage and services over the internet, facilitating collaboration and remote work. Communication: Instant Connectivity: Email, messaging apps, and social media have transformed personal and professional communication, enabling real-time interaction across the globe. Globalization: Businesses can operate internationally, breaking down geographical barriers.

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2. Literature Review

Research has demonstrated that access to IT can significantly impact economic development and social mobility (Norris, 2001; van Dijk, 2005). However, various studies indicate that a digital divide exists along socio-economic, geographic, and gender lines (Pew Research Center, 2019; UNESCO, 2020). This section reviews key literature on the relationship between IT access and inequality, identifying critical themes and gaps.

3. Methodology

This study employs a mixed-methods approach, utilizing quantitative data from national surveys and qualitative case studies from regions such as sub-Saharan Africa and South Asia. The analysis focuses on access to technology, usage patterns, and outcomes related to education and economic opportunities.

4. Results

4.1. Access to Technology

The digital divide remains stark, with rural areas and marginalized communities facing significant barriers to accessing IT. According to the International Telecommunication Union (ITU, 2021), over 3 billion people lack internet access, predominantly in developing regions. In Kenya the Government has taken calculated steps in providing support to most organizations like TVET institutions which are located next to the people in nearly all the constituencies of Kenya under the patronage of the siting area Member of Parliament (M.P) with fully support from NG-CDF by installing ICT HUBs and High speed internet connectivity, so that accessibility to technology is made possible hence reach the potential marginalized and underserved folks. Free internet access and basic digital skills course to the disadvantaged groups helped bridge the gap of digital skills illiteracy levels.

4.2. Economic Disparities

Data indicates that individuals with access to IT are more likely to secure better employment opportunities and participate in the digital economy like a digital training skills programme rolled out by Kenyan Government in collaboration with private partners like google and emobilis on initiatives such as Ajira Digital Training skills, Jitume Digital training skills geared towards equipping the youth with the necessary and appropriate digital competencies and functional knowledge that can enable them make money through online jobs specifically targeting youth enrolled in TVET Institutions. Additionally, for economic empowerment companies allowed their workers to work from their comfort at home thus telecommute and this impacted positively by cases of increased productivity and cost cutting considerably.

Commerce: E-Commerce: The rise of online shopping has changed consumer behavior and business models, providing convenience and broader market access. Fintech Innovations: Digital payment systems such as Mpesa platform in Kenya and cryptocurrencies are reshaping financial transactions.

Governance: E-Government: Governments utilize IT for better service delivery, transparency, and citizen engagement through online portals and digital platforms as seen in Kenya's Huduma Centres. Data Analytics: Governments can leverage big data for informed Data driven decision-making and policy formulation.

The Digital Divide: Concept: The digital divide refers to the gap between those who have access to modern information and communication technology (ICT) and those who do not. Relevance: In today's information-centric world, disparities in access to technology can lead to unequal opportunities in education, employment, and civic engagement. Implications: Addressing the digital divide is crucial for ensuring that all individuals can benefit from technological advancements and participate fully in society. (Warschauer, M. ,2003)

Another, important step forward is by the government digitalizing and onboarding almost all government services online through e-citizen platform, just by the click of a button anywhere and everywhere using mobile applications and or USSD codes. Conversely, those without access are at risk of being left behind, leading to widening income gaps (World Bank, 2020).

4.3. Educational Impact

Access to digital resources is crucial for education. Students in underprivileged areas often lack access to necessary technology, which impacts their learning outcomes and future prospects. For instance, during the COVID-19 pandemic, students without internet access faced significant educational setbacks (UNESCO, 2021). Education: E-Learning: Online courses and resources have made education more accessible, allowing self-paced and remote learning. Collaboration Tools: Platforms like video conferencing and digital classrooms facilitate learning across diverse locations.

In Kenyan situation, during the period of pandemic outbreak such as Corona virus (COVID-19), students were remotely engaged where the Government put in place the initiatives meant to scale down the impact by rolling out online classes with the aim of engaging students specifically the candidate classes to cover content necessary to preparing them sit of final examinations that were due. This was made possible by the government partnering with private sectors, more so mobile telephony companies like Safaricom and airtel by providing necessary support on matters affordable internet bandwidth access to underprivileged by providing subsidized internet bundles for browsing online. Google introduced google workspace for classrooms to be set up virtually both synchronously and asynchronously. For instance, in Universities the authorities were advised to rollout eLearning platforms to engage their students through Learning Management Systems integrated on the unified umbrella for all services commonly as Enterprise Resource Planning (ERP), Tertiary Institutions rollout Open Distance Education Learning (ODeL) these initiatives in the said institutions, used tools like Zoom, Blackboard, Microsoft teams and google meet to achieve their objectives by meeting live online. And basic education learning institutions such as primary and secondary schools respectively mounted their lessons using National Broadcasters through TV and Radio lessons to engage their subjects, under this initiative the major telephone companies devised user friendly packages of affordable airtime and internet bundles specifically for this initiative.

5. Discussion

The findings underscore the necessity of addressing the digital divide as a fundamental issue of social justice. Policymakers must prioritize initiatives that promote equitable access to technology, including investment in infrastructure, digital literacy programs, and targeted support for underrepresented groups.

5.1. Policy Recommendations

To address the deepening divide in the information society, targeted policy interventions are necessary:

- Infrastructure Investment: Governments should prioritize investments in broadband infrastructure, particularly in rural and underserved areas.
- Digital Literacy Programs: Educational initiatives aimed at improving digital literacy among marginalized populations can help bridge the skills gap.
- Public-Private Partnerships: Collaboration between government entities and private companies can facilitate access to technology and resources for disadvantaged communities.
- Privacy and Security**:** As our reliance on IT grows, so does the importance of privacy and security. Cybersecurity measures, such as encryption and firewalls, protect our personal data from unauthorized access and cyberattacks. For instance, in Kenya, privacy regulations, like the Data Protection Act of 2019, help ensure that our personal information is handled responsibly by organizations.

6. Conclusion

The evolution of information technology presents both opportunities and challenges. While it has the potential to empower individuals and democratize access to information, it has also contributed to a deepening divide that exacerbates existing inequalities. Addressing this divide is imperative for fostering an inclusive information society where all individuals have the opportunity to thrive. Future research should continue to explore innovative solutions and policy approaches to bridge the gap and promote equity in the digital age.

Compliance with ethical standards

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