**Digital Autonomy and Decentralized Governance: An Anarchist Critique of State-Led Digital Transformation in Africa**

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Abstract

Using qualitative methodology this paper presents a critical, anarchist analysis of state-led digital governance initiatives in Africa, challenging the traditional paradigm of centralized digital transformation led by both state and corporate interests. While digital transformation promises progress, the paper argues that it often mirrors historical patterns of state control, where technology becomes a tool of surveillance, social regulation, and capitalist accumulation, marginalizing communities and undermining grassroots autonomy.

By examining decentralized digital models, such as community-owned networks and peer-to-peer platforms, the study explores alternatives rooted in anarchist principles of self-management, mutual aid, and local autonomy. Case studies from across Africa reveal attempts at localized, independent digital initiatives that prioritize the needs of communities over state and corporate agendas. This paper calls for a reimagining of digital governance in Africa as a participatory, bottom-up process that empowers individuals and communities, bypassing traditional hierarchies and reducing dependency on both state and global tech monopolies. The findings highlight the potential for digital governance to be reclaimed as a liberatory project, fostering democratic digital autonomy in the Global South.

This paper will draw from lessons learnt from the Zenzeleni Networks in the Eastern Cape South Africa, a rural community-owned internet service provider, TunapandaNet in Kenya based in Kibera, Nairbi’s Largest informal settlement. Lastly blockchain for Transparent community-led Governance, this paper will advocate for Blockchain-based platforms that are known to be more secure in voting and allow community decision-making in ways that resist state interference, giving people direct control over their governance.

**Introduction**

Karl Marx (in 1867), long before the first computer was built in 1991, said that when looking at the very nature of capitalist production which drives innovation in society, the problem was not only that capitalist development across the globe in uneven, which would partly explain the differences between the Global North and Global South, but that we continue to suffer the incompleteness of said development. The need for rapid expansion of digital governance in Africa has been framed as a pathway to modernization, state efficiency, and economic growth. The Global South is often criticized to be at the tail end of the race compared to the Global North. However, in this paper we argue that digital transformation often reflects historical patterns of centralized control, where digital technologies become instruments of state surveillance, social regulation, and corporate monopolization. To provide a comprehensive understanding of the digital transformation and specifically its impact in state led initiatives this paper relies heavily on anarchism as a compelling theoretical framework that challenges hierarchical governance and advocates for decentralized, community-driven alternatives as a viable option for digital transformation.

When talking about digital transformation globally the discourse is often categorized into two broad groups of scholars: “technoptimists” and “technosceptics” (Njenga, 2018). Technoptimists view technology as a solution to all challenges, capable of overcoming constraints related to time, space, and distance (Njenga, 2018). This perspective aligns with the principles of technological utopianism, which also depicts technological innovations as a universal remedy. It is noteworthy that discussions surrounding the Fourth Industrial Revolution (4IR) frequently emphasize technological capabilities while often neglecting the influence of various environmental factors, such as political, cultural, and legal considerations (Webster, 2017). This aligns with Webster's (2017) assertion that leaders primarily focus on "keeping up with the technology (or be left behind)," a viewpoint rooted in technopositivism, or what Webster (2017) refers to as technological optimism. The literature reflectively in Global North studies (Naude, 2017; Gillwald, 2019 and Hwang 2016) when analysing the Fourth Industrial Revolution (4IR) often relies on theories initially developed to explain other technologies, which may not be entirely applicable. Until the late 1970s, technological determinism (TD) was the predominant explanatory framework guiding studies of society’s use of digital media (Mackenzie and Wajcman, 1999). This theory posits technology as an autonomous agent. A notable advocate of technological determinism is Ithiel De Sola Pool, who regards the Internet as a precursor to freedom, prosperity, and enlightenment (Lenert, 2004). This perspective tends to overlook the challenges associated with the use of Information Communication Technologies (ICTs) and their frequent failures to achieve anticipated and desired outcomes (Williams and Edge, 1996). Technological determinism has significantly influenced Western models of ICT Development initiatives, which view technology as a panacea with the inherent ability to transform social structures, reorganize work, and address social challenges (Leonardi and Jackson, 2004). This perspective has been termed 'technological solutionism' (Morozov, 2013).

Our paper steers away from technological deterministic arguments by foregrounding Giddens’ and Olorwiski’s structuration of technology thesis. In contrast to TD, social constructivist or social shaping of technology (SST) theorists take into account the social reality. The social shaping of technology paradigm has its roots in various theoretical postulations (MacKenzie and Wajcman, 1999). This paradigm critiques grandiose claims by TD by foregrounding the importance of social, institutional, economic, and cultural factors in enhancing or inhibiting technological use by different groups in society (Williams and Edge, 1996). While disciples of the technological determinism theory celebrate automation and other technological advances associated with 4IR, we argue that policy framework, true understanding of what it means to have technology centralized in the state, affordability, appropriateness, accessibility, and adaptability are critical factors impacting on the widespread adoption of technologies in the Global South.

Sparks (2001) argued that the developing countries, Internet content providers are primarily located in a few metropolitan areas. However, the urban concentration greatly misrepresents the usefulness and relevance of Internet use for the bulk of the population. In fact, most literature on the internet rarely ascribes power to ordinary citizens or consumers who decide on the uses and value that technology brings as per their own unique needs and purposes. Yet, on the contrary, Manji, 2008, quoted in (Ekine, 2010), puts ordinary people in the driving seat of social change, arguing that: “Social change is actually driven not by technology but by ordinary people being able to exert an authority over their own experience and, through common actions, developing the courage to determine their own destiny”.

**Why Anarchism and Its Relevance to Digital Governance**

Anarchism is frequently misunderstood or misrepresented in both popular and academic discourse. However, it is a rich and nuanced political philosophy that fundamentally challenges hierarchical authority, emphasizing principles such as voluntary cooperation, mutual aid, and self-governance (Kropotkin, 1902; Bakunin, 1871). Central to anarchist thought is a critique of the state as an inherently coercive institution that monopolizes power and often undermines individual and collective autonomy (Maisiri, 2019). Classical anarchists such as Mikhail Bakunin and Peter Kropotkin contended that both state structures and capitalist enterprises suppress human creativity and obstruct participatory forms of social organization. In their place, anarchism envisions decentralized governance grounded in horizontal decision-making and freely formed associations (Maisiri and van der Walt, 2018).

As a theoretical framework, anarchism offers powerful tools for critiquing state-led digital transformation initiatives, particularly in postcolonial contexts such as South Africa. These initiatives often mirror colonial-era governance structures, where digital innovation is implemented through centralized, top-down processes that primarily serve elite interests and multinational corporations (Gordon, 2008). In contrast, anarchist thought foregrounds community-driven, decentralized alternatives that prioritize local autonomy and collective decision-making.

Several anarchist thinkers have explored the relationship between technology and power. Winner (1986), in *Do Artifacts Have Politics?*, argues that technological systems are not neutral but embed specific political values, often reinforcing hierarchical control. Similarly, Gordon (2008) in *Anarchy Alive!* examines how anarchist movements engage with contemporary technologies to resist state power and foster autonomous spaces. These works underscore the necessity of questioning who controls digital infrastructures and whether they serve the interests of the many or the few. Decentralized governance models, a central tenet of anarchism, provide a viable alternative to state-controlled digital transformation. Kelty (2008), in *Two Bits: The Cultural Significance of Free Software*, highlights how open-source communities exemplify anarchist principles by fostering non-hierarchical collaboration and collective decision-making.

Utilizing a meta-analysis of existing literature and social science theories on technology, this paper seeks to critically evaluate the celebratory narratives associated with 4IR in a continent where structural challenges such as inequality, poverty, and unemployment are deeply entrenched in societal structures. The earliest industrial revolution significantly enhanced the efficiency of production technologies through mechanization and steam engines. The second revolution introduced an era of assembly lines and mass production, facilitated by the increased availability of electricity. The third industrial revolution saw the pervasive advent of computers and automation. Each transition between these revolutions was marked by an increase in automation (Syam and Sharma, 2018).

With each revolution, productivity increased significantly, although many jobs from the preceding industrial age became obsolete (David and Kim, 2018). If the world and its citizens are to successfully transition into the anticipated future driven by the 4IR, it is prudent to reflect on and learn from past revolutions. It is often easier to overlook or disregard past mistakes, leading to their repetition (Kletz, 2008). Analysing past Information Communication Technologies (ICTs) intervention errors can provide insights that form the foundation for future progressive interventions. Historically, African countries have been criticized for naively assuming that if developed countries adopted certain ICTs and subsequently advised Africa to do the same, compliance was necessary, often without guiding ICT policies or strategic plans (Odedra et al., 1993). Similarly, some ICT initiatives in Africa are influenced and shaped by powerful Western nations through donor agencies and institutions such as the World Bank and the International Monetary Fund (Leonardi and Jackson, 2004).

**Conceptualising Digital Transformation and E-Governance**

Contemporary statecraft in the Global South is increasingly shaped by the integration of digital technologies into public administration. At the centre of this shift are two interrelated yet distinct concepts: digital transformation and e-governance. While often used interchangeably, these terms denote different dimensions of the evolving digital state. In our paper digital transformation refers to the comprehensive reconfiguration of institutional practices, structures, and service delivery mechanisms through the strategic adoption of digital technologies (Mergel, Edelmann & Haug, 2019). In the public sector, this process extends beyond the digitization of existing workflows to encompass deeper structural and cultural changes aimed at improving efficiency, transparency, and citizen-centric governance (Mergel, Edelmann & Haug, 2019). It is often presented as a remedy for bureaucratic inefficiency and as a catalyst for development in the Global South. While E-governance, by contrast, is more narrowly defined as the application of (ICTs) to support the functioning of government institutions, facilitate citizen engagement, and improve service delivery (Heeks, 2006). It encompasses a broad spectrum of tools and platforms from digital identity systems and online portals to data-driven policymaking designed to streamline interactions between the state and its citizens.

Together, these paradigms form the ideological and operational backbone of state-led digital initiatives. Yet, their implementation in the Global South has been far from uniform or unproblematic. While proponents highlight increased access, transparency, and responsiveness, it is equally important to highlight the persistent structural inequalities, digital exclusion, surveillance risks, and the reproduction of authoritarian governance through digital means. This paper adopts a critical lens to assess the implications of digital transformation and e-governance in state-led initiatives, interrogating both their emancipatory potential and their complicity in entrenching existing power hierarchies.

The conversation around digital transformation is heavily anchored in the Fourth Industrial Revolution (4IR) yet the Global South, Africa in particular still suffers from the incomplete distribution of previous industrial revolutions. It is because of that reason a careful analysis is required when looking at the specific interactions between society and technology. Hwang (2016:616) defines 4IR as "the convergence of cyber-physical systems, cloud technology, the Internet of Things, and the Internet of Services, and its integration and interaction with humans in real-time to maximize value creation". This is the widely accepted definition and yet in our paper we argue that such a definition while true creates a linear techno-centric view of the 4IR ignoring important factors like the social, political, legal and ethical implications. There appears to be a near consensus that 4IR is perceived as the elusive solution to global challenges, as noted by Popvic (2019). It is often portrayed as a panacea for the rapid transformation of the world into a utopian 'digital future’.

Gillwald (2019) argued that there was no organic connection between the 4IR technologies that would translate into socio-economic benefits. The logic was that instead of prioritizing e-governance and digital transformation in this wave of the 4IR. We argue that The focus for Global South should be prioritize complementary policy frameworks that would allow the facilitation of the harvesting said benefits of the 4IR (Gillwald, 2019). Whilst 4IR has been at the centre of discourse in various international platforms, there is a paucity of systematic efforts to scrutinize “the state of the art of this new industrial revolution wave” (Liao et al, 2017). This state of affairs is perhaps more pronounced in Africa, which is primarily yet to even enter the 3rd industrial revolution. Consider the following statement from ref (Alhassan, 2004); “Such a dream of transforming an agro-based economy into an information society must either be a flight of fancy or a thinking hardly informed by the industrial economic background of developed economies that are in transition to informational economies. For an economy with about half of its adult population engaged in the food production sector, and about 70 percent of its development budget sourced from donor support, any talk of transition into an information society sounds like a far-fetched dream”, (p. 12).

While African leaders and policymakers have been vocal about the promises of 4IR, the majority of African countries remain primarily dependent on agrarian economies. In reference to community ICT projects that failed due to the technology-reality gap (Arunachalam, 2004). Furthermore, there have been concerns around security and rights infringements related to data privacy, information dissemination, surveillance and the use of facial recognition technologies. These concerns have been amplified by the uncritical embracing of 4IR in the African context without putting in place sufficient safeguards against data exploitation and invasive surveillance practices. Thus, while 4IR promises to bring positive benefits to society, it is important to note that it also brings negative aspects.

Since the late twentieth century, governments globally have been increasingly undergoing a digital transformation with the intent of providing better services while being more accessible and accountable. This digital transformation has often been framed as e-governance, which is defined as the use of digital technologies in government activities, including the Internet of Things, Big Data, Artificial Intelligence, and ICT (Malodia et al, 2021). The scholarship on the field of e-governance is still developing. Malodia et al. (2021) argue that the literature has tried to explore e-governance in five different stages. Firstly, scholars focused on how governments utilized ICT for information transfer. As technology improved with IT, the literature then advanced to the next stage of investigating how these technologies can assist governments in reducing administrative tasks. The third stage of scholarship within e-governance highlighted the role technologies played in communicating with citizens and bettering governmental services. The last two stages focus on investigating technology adoption and its impact on service delivery to citizens, as well as citizen perceptions towards e-governance (Malodia et al., 2021). However, conclusively, the literature suggests that the use of these technologies in governance is generally to create the "empowered citizen," which is when decision-making moves away from the government towards the citizen (Box, 1999; Zhang and Bhattacharjee, 2024).

Inspired by the potential benefits e-governance can have for citizens, many countries have increasingly adopted technologies into their functionality. For example, approximately 80% of the United Nations member states' governmental processes use e-governance services (Palacin et al., 2021). The European Union has built multiple projects towards e-governance, such as the Electronic Simple European Networked Services (e-SENS) project, which created unified digital platforms that offer public services across European countries. The e-SENS provides services such as e-ID, which allows cross-border recognition and validation; e-document services across borders; and e-signatures to facilitate consent on documents across EU borders (Baheer, Lamas, Sousa, 2020). Likewise, the United Kingdom has made strides towards the same goal and integrated different governmental departments into one site so citizens can easily gain access to services and information on one website named GOV.UK (Mu and Wang, 2022; Gabor, 2024).

African countries, while lagging behind in e-governance adoption, are moving towards it. Four countries, in particular, are making strides, namely Mauritius, South Africa, Seychelles, and Tunisia. Out of 54 countries on the continent, these four countries score above average on the United Nations’ E-Government Development Index (EGDI), which measures e-governance indicators such as digital skills, civic participation, and more (Goldmark, Alarcón, and Denguezli, 2024). For example, the South African government has e-governance services such as eFiling SARS, an online platform that taxpayers can use to submit returns, declarations, and payments electronically. Currently, 90% of all tax payments are done through this platform (Vorster, 2023).

It is likely that the trend of technological adoption in core government activities is going to grow, in part due to the many empirical studies highlighting its benefits. The EU has experienced improvement in administrative technologies such as the Once-Only Principle (TOOP) platform, where citizens and firms submit standard information to the government on one platform, reducing errors such as the duplication of forms (Baheer, Lamas, Sousa, 2020). Other scholars have gone as far as to show that these technologies make offline people participate more in democratic processes (Tai, Porumbescu, and Shon, 2019). Likewise, in America, Smith (2010) conducted a survey consisting of 2,258 adults, and 82% of internet users in this study used the internet to gain governmental information and complete state online transactions. In South Africa, the platform GovChat has shown potential to increase citizen engagement in government processes, as citizens can rate and report on local government facilities and service delivery, apply for grants, and access other services on the platform (GovChat N.A.). These technologies promote accountability and transparency, as seen in South Korea’s Open Data Portal, which makes datasets across various industries publicly available, enabling citizens to scrutinize government activities (Purwanto, Zuiderwijk, and Janssen, 2020; Park and Samijadi, 2021). Lastly, other scholars have shown how e-governance assists countries in achieving their Sustainable Development Goals (Nielsen 2016; Lyulyov et al. 2024).

However, despite governments generally employing digital services with the intent of bettering society, many of these projects completely or partially fail. They fail primarily due to poor government architecture, which can be understood as the difference between planning the design of an e-governance project and the realities of the country’s situation (Heeks, 2003; Baheer, Lamas, Sousa, 2020). For example, Anthopoulos et al. (2016) studied a failed health e-service project and found that optimistic political will affected design-reality. The project was too large-scale with no consideration of daily responsibilities, which resulted in halting efficiency. Additionally, limited interoperability reliability referring to the ability of different systems and data sources to exchange information among government departments can be a major challenge (Sedek et al., 2014; Krimmer et al., 2021).

Public officials themselves may be in an organizational culture that fears the implementation of advanced technology due to fear of the unknown (Hur et al., 2019). A systematic literature review by Mu and Wang (2022), consisting of 174 studies, found that governmental officials would hinder citizen involvement in designing and delivering e-governance services if they felt that citizen expectations would adversely affect their performance metrics. Additionally, the lack of digital literacy and skills among government workers tends to be a hindrance in governance implementation (Gil-Garcia, Dawes, and Pardo, 2018; Jonathan et al., 2021; Alenezi, 2022).

The failure rate of e-governance is worse within Africa due to the lack of technological infrastructure, internet access, technophobia, lack of human capital, and insufficient political will (Hafkin, 2009; Mpinganjira, 2013). In 2023, 95% of all African countries failed to achieve average global scores on the E-Government Development Index (Rarhoui, 2024). Dada (2006) approximates that 33% of e-governance initiatives in developing countries completely fail, while 50% partially fail. Heeks (2003) provides more pessimistic statistics, estimating that only 15% of e-governance initiatives succeed in developing and transitioning countries. It has become clear that a contributing factor is that African governments often take Western designs and try adapting them to their realities while ignoring the cultural contexts in which these technologies were developed (Hafkin, 2009).

Citizens on the continent are slow to use existing e-governance services (Mosweu, Bwalya, and Mutshewa, 2017). For example, despite Zimbabwe’s e-governance initiatives, such as online passport application systems, many citizens never use these services, as nearly 67% of all Zimbabweans live in rural areas with limited internet access, high data costs, and a high unemployment environment (Munyoka, 2020). In Africa, government offices are often faced with corruption and conflicts of interest. In Egypt, e-governance posed a threat to public officials, leading them to sabotage software developers, fearing they would lose their jobs and that the accurate information e-governance brings would work against their self-interests (Elkadi, 2013). As e-governance continues to evolve, Artificial Intelligence (AI) as a technology is increasingly being utilized (Al-Ansi, 2024). AI refers to the simulation of human intelligence processes in the form of software or algorithms within computer systems, allowing them to reason, learn, and make decisions akin to humans.

**AI governance to citizens**

The integration of AI within e-governance is often viewed as a means to enhance the benefits of e-governance discussed above (Khouya, 2023). Sousa et al. (2019:7) conducted a literature review consisting of 59 studies on AI in the public sector and found that AI is used to assist with “predictions and alerts, calculations, analysis, and learning,” essentially to create an effective “knowledge management system” (Sousa et al., 2019). For example, the UK has increasingly employed AI in government services such as law enforcement. A law enforcement AI named Lizzy can predict, with 84% accuracy, the odds of victims who are going to experience domestic violence (Ellery, 2024). Additionally, AI can be used to build government trust, such as the Public Sector Fraud Authority network in the UK, which uses AI to detect fraud in public funds. It identified £311 million in fraudulent benefits and irregularities within its first year (Government UK, 2023; Public Sector Fraud Authority, 2023). The US utilizes AI models for better forecasting of natural disasters, allowing the government to expedite relief efforts (Bari, 2023; United States Government Accountability Office, 2023). In Australia, AI is used to detect road defects to prevent accidents and promote safety; their AI detected 10,688 road defects in three months, assisting in their repair (Government News, 2024). For a more detailed discussion on AI in the public sector and its future trajectory, please see Sousa et al., (2019).

In Africa, AI in e-governance is still in its infancy due to the absence of national strategies, institutions, and infrastructure, but many states are making efforts to adopt it continuously (Pasipamire and Muroyiwa, 2024). In Togo, AI is used to improve government services and identified 57,000 recipients whom the state had no direct contact with—in the poorest areas, surviving on $1.25 a day, for its Novissi cash transfer program to assist the poor (TogoFirst, 2021; Signé, 2025). The Rwandan government collaborated with Babyl Health Rwanda to develop telemedicine, where patients describe their symptoms to an AI-powered symptom checker that analyzes their report to provide the most likely causes of illness and the next best steps, increasing healthcare efficiency (Nalubega and Uwizeyimana, 2024). In Uganda, AI is used by the state in the energy industry to reduce electricity theft through real-time monitoring of consumption and reporting irregular connections (Nalubega and Uwizeyimana, 2024). Countries such as Mozambique, Angola, Zimbabwe, and Tanzania use AI for surveillance capabilities in the name of security threats (CIPIT, 2023).

Many states adopt AI in e-governance frameworks to enhance public service delivery, policy development, and citizen engagement. However, this adoption is accompanied by significant challenges that actually harm citizens.

**AI risk**

AI can also be problematic for its citizens through its bias, which is “discriminatory or inaccurate predictions and outputs of particular populations based on the data fed into the AI system” (Mbalaka, Maisiri, and Teren 2024:241). Bias can be seen in America’s IRS tax auditing system, where an algorithm suggests Black taxpayers be audited three to five times more than other races (Tankersley, 2023). The Correctional Offender Management Profiling for Alternative Sanctions facility used AI that incorrectly classified Black defendants as having a higher risk of recidivism relative to White defendants (Angwin et al. 2016). Singh (2022) adduces AI bias within South African police services, which predict crime and have a tendency toward low-income communities. Olivia (2023) argues that African countries such as Ghana use AI systems to assist with identification; however, in many African countries, gender inequalities persist historically in obtaining digital IDs. Based on these data, flawed algorithms have led to the continuous misidentification of Black individuals, inhibiting their ability to access essential services. Moela et al. (2024) show that AI has been widely adopted in African financial services in countries such as South Africa, Nigeria, and Tunisia from 2003 to 2023. However, these advancements usually neglect the ethical implications of this technology, and as a result, AI bias is prevalent, with a focus on technical aspects making societies vulnerable to it.

AI within e-governance has also allowed states to carry out aggressive surveillance on citizens, raising concerns about human rights, authoritarian state control, and privacy while suppressing the voice of citizens. The U.S. private sector developed AIs that have been used by Israel in its military attacks against Gaza and Lebanon to surveil suspicious behaviour in the area and identify targets expeditiously. However, AI errors in military vehicles have accidentally led to the killing of civilians and children (Biesecker, Mednick, and Burke, 2025). China extensively uses AI to propagate state surveillance and authoritarian rule, for example, through the Integrated Joint Operations Platform, which collects personal data from its citizens, ranging from biometrics and facial images to day-to-day actions. This AI identifies state enemies, leading to imprisonment, with suspicious activity flagged by the algorithms, including traveling to another country for an extended period. Authorities then investigate and go through phones and personal information for suspicious content and software. Human Rights Watch (2019) categorizes this as "algorithms of oppression" that violate human rights.

In addition to the above, China is influential in Africa, providing African countries like Zimbabwe, Zambia, and Ethiopia with surveillance technology. For example, Huawei technology assists with digital surveillance in at least 12 African countries. The company assisted Uganda’s state in spying on political parties and tracking locations and social media communication (Akello, 2022; Okolo, Aruleba, and Obaido. 2023). In South Africa, mass AI-driven surveillance systems such as Vumacam are building a country-wide CCTV network to track and trace citizens. The continuous privatization of public services enables private security companies, often partnering with Chinese firms, to expand surveillance in Africa (Hao and Swart, 2022). Zimbabwe has also built a mass facial recognition surveillance network, sending all collected data without citizen permission to China, which uses it to train its own facial recognition technologies on Black populations (Okolo, Aruleba, and Obaido, 2023). AI surveillance will worsen the power imbalance between the state and citizens.

Transferring decision-making from humans to AI systems poses a threat to accountability and transparency, as these algorithms operate within black boxes, meaning the public cannot understand or scrutinize how decisions are made (Licht and Licht, 2020). For example, the UK’s Home Office implemented AI that recommended law enforcement actions against 41,000 adult and child migrants and asylum seekers using migrants’ personal data. Many migrant rights organizations warned the Home Office to stop using this harmful technology, as it lacks transparency in its decision-making (The Guardian, 2024).

It is unclear how these algorithms make decisions. The Public Law Project in the UK created a register of automated services in the public sector, finding 55 instances of automation, including AI. Of these, 38 services had low transparency, and 83% of the cases were only understood due to freedom of information requests. Additionally, just over half lacked publicly available evaluations of how these technologies impact citizens (Public Law Project, 2025). Similar cases in Africa are not well documented, but such challenges will inherently be a problem in any AI system used. AI in e-governance raises ethical questions regarding data privacy, algorithmic bias, and increased state surveillance that may restrict civil liberties. Legal frameworks around AI in e-governance globally lack adequate provisions for AI’s role in public decision-making, as these systems make decisions without transparency (Şişli and Kizil, 2024; The Public Law Project, 2024). AI in the public sector poses a greater threat to African governments, which usually have inadequate policy and administrative proficiency to adapt to the adversities that new technologies bring. Additionally, governments are dependent on technologies from the Global North (Plantinga, 2024; Heeks, 2021). This creates the risk that AI developed in the Global North will not align with local infrastructure or fit within the African context. Therefore, Plantinga (2024) believes the likelihood of African countries successfully adopting these systems is low.

In fact, AI could reduce accountability and transparency while using data to harm citizens. There is no comprehensive overview of AI-related problems in the public sector, but governments are increasingly involving citizens in information production and allowing AI to make decisions (Reis, Santo, and Melão, 2019).

**Block Chain Case study**

Blockchain is a technology that facilitates a tamper-proof ledger that allows people to transparently monitor all transactional records in real time. The inability to manipulate transactional records results in this technology enhances trust and efficiency between different actors (Dong, Abbas, and Kamruzzaman, 2023). This section shall look at two case studies block chain provided its community an alternative economy from grassroot level while embodying anarchist principles.

**Circle UBI Berlin**

In 2020 Berlin adopted a pilot block chain technology in attempts to provide universal basic income (UBI) for all residents, inspired by anarchist principles named Circles UBI (Cabaña and Linares, 2022). Circles UBI is a local digital currency that uses mesh credit tokens for payment. Mesh credit is a decentralized system that allowed the community to manage and issue out credit to themselves without a centralized institute such as a bank that rely on a fiat currency. The Circles UBI system does not have a centralized currency but has many different virtual currencies that is mediated by trust within the community (Papadimitropoulos and Perperidis, 2024). This peer-to-peer financial system allows residence to access debt free money and creates a mini economy from the bottom up. Circle UBI was used for everyday goods such as food, beverages and services like meditation training (Avanzo et al. 2023).

In order to join the app, three already existing users have to vouch for you that you are a trustworthy user (Circle Handbook). Every individual who is registered on the system has their unique virtual currency and payments occur only if there has been a web of trusted individuals between people. The reputation of users in this network is converted into individual tokens. Businesses also register to be part of the Circle UBI marketplace where an algorithm matches them to exchange different resources and needs, and the more trusted a business is the more connections and opportunities it has to operate within this market (Papadimitropoulos and Perperidis, 2024). When blockchain tokens are used to purchase goods and services there must be a web of trusted individuals who believe that credit can be given out to individuals who is able to fulfil their obligations (Cabaña and Linares, 2022).

This technology allowed for economic decentralization as the distribution of money in the hands of people assisting each other with mutual aid and giving them alternative solutions outside current problems. (Circles Handbook.). Users of within this token would meet monthly in person or online to discuss economic rules, issues experienced, brainstorm ideas and vote on issues such regarding the technology (Circles Handbook). This often led to new individuals learning about the technology and being involved in this ecosystem (Papadimitropoulos and Perperidis, 2024). Smaller groups or ‘Circles’ build up to create a democratic confederalism to discuss horizontal engagement as the technology was against up down structures (Circles Handbook). This decentralized engagement gave residence the power to take control of the economy and creates a psychological state of solidarity as success of the project not only relied on technical development but social relations (Cabaña and Linares, 2022).

The Berlin pilot attempt to use blockchain technology is the manifestation of how technology can express anarchist principles in practice. This platform rejects traditional top-down rationalization centralized authority of how money is created, credit criteria and distributed. The network is in part being built form the bottom up where residents carry the values of mutual aid, reciprocity, horizontal decision making, democratic participation and trust which mirrors anarchist commitment to federated organization. In this ecosystem, community cooperation replaces against the logic of commodification and competition under capitalism as state and outside capital to a large degree is locked out of the ecosystem. The power of economic redistribution moves from the state’s hands to Circle UBI users directly. As the government who would traditionally have policies governing redistribution.

**Kenya the Safaru Network**

In Kenya the Grassroots Economics Foundation (GE) NGO took the initiative to create the Safaru Network in 2010 which is a block chain-based currency trading in digital Community Inclusion Currencies (CIC) tokens with over 40000 users and 3 million dollars’ worth of transactions recorded in low-income communities (Mattsson, Criscione, Takes 2023; Mqamelo 2024). GE is well known in the for helping with water tanks, food, agricultural technologies within improvised communities. However, in exchange for this support the community must use CIC tokens for many services ranging from school fees to food (Mqamelo, 2024). Additionally, to join the blockchain ecosystem individuals must have some product, services to add on to the community and once they join, they received a donation equivalent to $3,60 in CIC tokens (Mqamelo, 2024).

Trust, reciprocity, cooperation and participation is essential because local firms have to accept Safaru to exchange goods and services as this currency negates the governments involvement and fiat currency. For example, micro businesses in the area connected to saving groups that could consit of 30 people (Ba, Zignani and Gaito, 2023). Saving groups consisted of “members who come together and save weekly, loan out their savings to each other, and then redistribute all the funds (fees and interest) to the same members at the end of the year (Kuk, Meyer, Giamporcaro 2024:27).” The Safuru platform allowed them the opportunity to convert their tokens to Kenyan shillings once a month and were only allowed to convert up to 50% of their saving pot (Barinaga and Zapata-Campos, 2023). However, this conversion process was expensive and thus encourage locals to keep their local savings in Sarafu tokens (Kuk, Meyer, Giamporcaro, 2024). The savings group created mutual interdependence and met weekly to discuss issues of accountability, knowledge sharing and best economic decisions such as approving micro loads or fund community based long term development of community projects as a group. (Kuk, Meyer, Giamporcaro, 2024). This was community funding to assist with school fees, basic needs and business growth helping other interest free. Assets donated by GE such as freezers, maize grinders and water tanks were decentralised and community run. Instead of micro firms working in silos the savings group use the assets in a manner that benifited all (Ba, Zignani and Gaito, 2023). This act as buffer as the currency within Kenya is often unstable and sometimes cash is unavailable for them to trade.

The Safaru digital currency was designed to encourage grassroot economic participation with unemployed individuals, vendors. For example, unemployed individuals were locked out of the labour market with no access to shillings but could offer their cleaning services to individuals and community projects to earn Sarafu (Mqamelo, 2024). The business owners within the area trust that the Safaru is worth something and exchange goods for them. There have been reports showing that those who did petty crimes and were now allowed to participate in the economy changed their ways to be law abiding citizens due Safaru (Kuk, Meyer, Giamporcaro, 2024). In a Red cross survey 70 percent of users reported that they would have not been able to purchase products and service if not for Safaru (Mqamelo, 2024). Other studies have supported this showing much more economic activity from those engaged in these platforms (Mattsson, Criscione, Takes, 2023).

The Sarafu Network expresses anarchist principles by decentralized economic organization of community managing how they create and distribute money of trust and mutual interests. These decisions are decided by them and operate outside hierarchical control of currency. There is horizontal decision making as the network is governed by community gathering and saving groups where all individuals have a say. The community members exchange goods and services for survival to meet their needs.

**Zenzeleni Networks in the Eastern Cape South Africa**

According to Fobosi (2024), Zenzeleni Networks exemplifies the kind of infrastructure logic needed for AI governance from below. It’s not just a community network—it’s a decentralised act of refusal, an infrastructural intervention that disrupts corporate telecommunication monopolies by centering indigenous ownership and autonomy. Built with and for the Mankosi community in the Eastern Cape, Zenzeleni directly challenges the affordability myth used to justify exclusion, offering access up to twenty times cheaper than commercial providers. This is critical. Just as the bourgeoisie in AI can afford to train, fine-tune, and dominate large models, the poor are priced out of participation. Zenzeleni flips this by returning technological agency to the community. The same principles must be applied to AI: community-controlled datasets, models trained on local knowledge, and governance frameworks that aren’t handed down from Palo Alto or Geneva, but constructed through lived experience and grassroots epistemologies. Zenzeleni’s model makes clear—governance is not policy; it is practice, it is resistance, and it is relational. AI governance from below must be rooted in these same principles of refusal, redistribution, and reimagining of who gets to define intelligence, value, and access.

**Governing AI from Below: Rethinking AI Governance in Africa through Anarchist Logic**

AI governance suffers from epistemological shortcomings rooted in its foundational design, which often negates alternative ways of knowing. This negation, coupled with centralized hegemonic control, limits inclusive participation (Griffen and Owens, 2024). Open-source alone is not a complete solution. While large language models have been released for public use—allowing individuals and even nations to adapt them to local needs—the computational power required to run these models at a level competitive with top-tier LLMs remains largely inaccessible. This creates a form of classism in AI, where the bourgeoisie can afford the best systems, while historically marginalized groups face continued exclusion. As a result, indigenous knowledge may persist, but rarely in a form that is globally competitive or recognized within dominant AI frameworks. Furthermore, this altruism of giving out models for free is not entirely altruistic because these companies are aware of the imminent rise of the opensource ecosystem, and their decisions are due to a need to control the growing movement. Open-source browsers, AI models are reclaiming the market share, and companies such as google benefit immensely from controlling the ecosystem. The open-source movement seeks to gain from the innovation from its community to help enhance its products Griffen and Owens (2024). Therefore, the efforts made by large corporations to try and provide ethical and accessible software has been critiqued for being a self-motivated agenda. However, if equitable governance mechanisms capitalise on this available source-code, and invest in computational power, it might see fruitful competition surfacing from the often marginalised indigenous knowledge systems.

Conclusion

The contradictions of neoliberalism foretold by the foresight of Marx still hold true today, the perpetuated quarrel for balance remains an unattainable feat, and as technology enhances production, the global inequalities rise as the worker becomes ever-so-more redundant during this rise of the machine. The rise of AI, is perpetuating these unequal divisions, divisions, which are now being reverberated into knowledge production. As Bounavantura Dos Santos raised, cognitive injustice, is a byproduct of western hegemonic influence, and in the realm of AI, it is true. Therefore, it is imperative to ensure that this lack of balance is understood. The bandaid solutions provided by open-source donations are a fallacy that serve corporate interests in the form of tax incentives and beneficial knowledge exchange. Grassroots initiatives such as the Zenzeli networks do offer the indigenous access to the internet, but AI is an elitist hobby, and such innovations are thus coupled by that.

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