



The Global Development of ICT: A Quest to Assess Uncertainty and Challenges in Combating Corruption

Saphy L. Bullu

Lecturer in Law, The Open University of Tanzania, Tanzania.

Article information

Received: 4th September 2025

Received in revised form: 17th September 2025

Accepted: 17th November 2025

Available online: 21st February 2026

Volume: 3

Issue: 1

DOI: <https://doi.org/10.5281/zenodo.18719837>

Abstract

Information and Communication Technology (ICT) has brought about a monumental shift in the fabric of society, primarily through the establishment of innovative communication platforms. These platforms have revolutionised the way individuals interact and conduct business. A key aspect of this transformation is the facilitation of private communication, enabling people to connect and share information with unprecedented ease and speed. Furthermore, ICT has significantly enhanced telecommunication capabilities, particularly in the realm of commercial transactions, streamlining the electronic exchange of offers and acceptances, which are fundamental to contract law and business operations. However, alongside these remarkable advancements, the increased reliance on ICT also introduces new and complex challenges, most notably the emergence of novel avenues for corruption. While ICT offers numerous benefits, its inherent nature also makes it susceptible to misuse. This article examines whether the development of ICT introduces new challenges in combating and controlling corrupt activities. It also aims to propose new solutions for combating corruption. However, findings suggest that this same advancement introduces new challenges in the fight against corruption. Some loopholes allow public officials and individuals to engage in unlawful activities, which can obstruct various processes and procedures. The qualitative doctrinal method involves providing an overview of information technology, its development, and its characteristics. The modality of data collection combines primary and secondary sources in order to make an analysis, allowing nuances to merge from the collection material. This dual-source approach ensures a comprehensive exploration as to whether information technology presents a new challenge in combating corrupt transactions or if it serves another purpose.

Keywords: - Corruption, Corrupt Activities, Information Communication and Technology, Illicit, Transparency, Grand Corruption, Active Corruption.

I. INTRODUCTION

It has been years since Information Communication Technology (ICT) arrived to attract businesses with the promise of new opportunities. In the world of ICT, it is easy not only to create significant issues concerning the adequacy of terms presentation but also to succumb to the temptation of creating an incredibly one-sided financial flow. To make a genuine assessment of whether the development of ICT is a new challenge to fight against corrupt transactions or not, it is necessary to improve our understanding by presenting the conceptual framework of ICT, its development trends, and the characteristics to see the extent to which it facilitates a new challenge or not. This part aims to stipulate that electronic communications are merely another form of communication that shaped the process of globalisation by recognising their potential to accelerate Africa's economic integration and thereby its greatest prosperity and social transformation. The first aspect to be presented is the concept of ICT, as it illustrates how ICT is perceived globally. To provide a framework for reviewing the use of emerging technologies in the fight against corruption, an outline of the definitions of corruption has to be presented, as well as the different types of ICT tools to be reviewed, to indicate the link mechanisms linking the two concepts.

The recent and rapid expansion in ICT network connections, while indicative of progress and increased connectivity, has unfortunately been exploited by certain individuals and groups for engaging in illicit activities (The Global Surge of ICT: Assessing Growth and Diffusion 2023).

However, this growth has unfortunately been exploited by certain individuals and groups engaging in illicit activities. The anonymity and reach provided by these networks can be misused for various corrupt practices, posing a significant threat to ethical conduct and the integrity of digital interactions (The SADC Model Law on Electronic Transactions and Electronic Law 2013). This exploitation undermines the trust and security essential for the continued growth and beneficial use of ICT in society. It's been years since ICT emerged, attracting businesses with the promise of new opportunities. In the realm of ICT, it's not only easy to create significant issues concerning the adequacy of terms presented but also tempting to facilitate a one-sided financial flow. To genuinely assess whether the development of ICT presents a new challenge in combating corrupt transactions, we need to improve our understanding by presenting a conceptual framework of ICT, its development trends, and its characteristics. This analysis will help determine the extent to which ICT facilitates new challenges.

This section aims to demonstrate that electronic communications are simply another form of interaction that has shaped the process of globalisation. It recognises ICT's potential to accelerate Africa's economic integration, thus contributing to greater prosperity and social transformation. The first aspect to be discussed is the concept of ICT, illustrating how it is perceived globally. To create a framework for reviewing the use of emerging technologies in the fight against corruption, we must outline the definitions of corruption and the different types of ICT tools available, highlighting the mechanisms that link the two concepts. The integrity of digital interactions and ethical conduct are at risk due to various corrupt practices. By doing this, the trust and security that are essential for the continued growth and beneficial use of ICT in society are undermined.

1.1. The Idea Behind Information Communication Technology

ICT encompasses the vast array of digital technologies, resources, and infrastructural components that facilitate the creation, storage, effective management, seamless manipulation, and efficient information communication across various platforms and channels (the American National Standards Institute 1918). This broad field includes, but is not limited to, computers of all types and sizes, the expansive network of the internet, and diverse broadcasting technologies that transmit information to wide audiences (Kaware & Sain 2015, 25). In her insightful publication, Happy (2023) contends, "ICT fundamentally involves devices and systems designed to process input data and subsequently generate digital output, thereby transforming raw information into usable formats". The applications of ICT are remarkably diverse and pervasive, spanning a multitude of critical sectors including medicine and healthcare, aerospace engineering and exploration, the financial industry including banking and investment, various modes of communication, both personal and professional, and the ever-expanding realm of entertainment.

Additionally, Happy (2023) underscores the paramount importance of ICT in contemporary life, highlighting its profound impact on a wide spectrum of daily activities and societal functions. ICT plays a central role in shaping how we communicate with each other, how we conduct shopping and commercial transactions, the methods by which we manage our finances and banking activities, the forms of entertainment we consume and enjoy, and even how we oversee and manage our homes and domestic affairs.

On a global scale, the crucial role of ICT in fostering and promoting sustainable development has been widely recognised and acknowledged by international organisations and governing bodies (The World Summit for Social Development, 2003). The United Nations, for instance, has formally recognised the significant contribution of ICT to enhancing international cooperation among nations and has emphasised the critical need to improve access to reliable and high-speed broadband networks for all populations (The United Nations Conference on Sustainable Development). The International Telecommunication Union (ITU) has also noted the substantial and continuing growth of ICT penetration rates across the globe, highlighting the industry's success in overcoming significant infrastructure challenges and underscoring its fundamental necessity for achieving the ambitious Sustainable Development Goals set forth by the UN (United Nations Telecommunication Unit 2015).

Despite the remarkable and undeniable advancements that have been made in the field of ICT, it is important to acknowledge that access to these technologies and resources remains unequally distributed across different regions, communities, and demographics. Furthermore, various regulations and legal frameworks are in place at both national and international levels to protect the interests of businesses and clients who are operating within the ICT sector worldwide, ensuring fair practices and responsible innovation.

II. THE EVOLUTION OF ICT AND ITS TRENDS

The development of ICT is having a significant and far-reaching impact on the way modern society functions, fundamentally reshaping many aspects of our daily existence. Its influence extends to virtually every corner of society, transforming how we communicate with one another, how we access information from around the globe, and how we conduct our work and pursue our education. The world of business has been dramatically altered by ICT, as have the interactions between citizens and their governments. Even our personal lives are being continuously reshaped by the ever-increasing presence of technology. This pervasive influence of ICT is not only driving changes at the microeconomic level, influencing individual businesses and industries, but is also fostering a much broader economic transformation that affects entire nations and global markets (Nelson 2019). The rise of ICT is creating entirely new market opportunities, paving the way for innovative businesses and services that were previously unimaginable.

The convergence of ICT with the broader trend of digitalisation is revolutionising societal relations, changing the way people interact with one another and with the institutions that govern them (The Digital Trends in Africa 2021). This convergence is also transforming the way public services are delivered, affecting key aspects such as efficiency, accessibility, and overall quality. As well, digital transformation offers the continent of Africa a unique and valuable path to accelerated

economic growth, enabling faster industrialisation, contributing to the reduction of poverty, and ultimately leading to improved living standards for its citizens (Ali et al., 2017). Strategic investment in ICT development is crucial, and this requires robust multi-stakeholder partnerships that bring together governments, private sector companies, civil society organisations, and international partners (Mariani et al., 2022). Such partnerships are essential for effectively coordinating digital ecosystems and ensuring that all stakeholders are working towards common goals.

Strengthening digital economies requires a concerted effort to invest in integrated digital services, making these services readily available and accessible to all citizens (Avgerou, 2010). It is particularly important to extend these digital services to underserved rural communities, ensuring that they are not left behind in the digital revolution (The Digital Trends in Africa 2021). This focus on inclusivity is vital for promoting broad-based economic growth that benefits all segments of society. The increasing digitisation of processes and network infrastructure is fundamentally altering social, political, and economic spheres, profoundly impacting communication patterns and established business practices. This transformation presents both significant opportunities and potential challenges for African nations as they navigate the complexities of the digital age. The rapid evolution of ICT necessitates faster adaptation of contract law, ensuring that legal frameworks remain relevant and effective in the face of rapidly changing digital commercial transactions (Adam & Fazekas, 2021). ICT growth provides new frameworks for social, political, and economic development, enabling the creation of innovative solutions to address a wide range of challenges facing societies around the world (the World Summit for Social Development 1995). However, it is important to acknowledge that ICT also presents potential downsides, including the increased potential for corrupt activities. This underscores the critical need for ethical considerations and robust governance structures to mitigate the risks associated with the widespread adoption of technology and ensure that ICT is used for the benefit of all.

III. THE TRAITS OF ICT TO NURTURE CORRUPTION

ICT is a multifaceted field that draws together elements from various disciplines, including information systems, which focus on managing and using data, and human-computer interaction. The design and evaluation of interfaces between humans and computers explore human communication processes, and development studies, which examine strategies for improving the well-being of societies (Ershova et al., 2020). A defining technological characteristic of ICT is its emphasis on the creation of digital resources, the accessibility of these resources to a wide range of users, and the efficient implementation of digital transactions, which streamline processes and reduce costs.

The United Nations Economic Commission for Africa provides a comprehensive definition of ICT, encompassing a wide array of technologies and services (1958). According to UNECA, ICT includes internet services, which provide access to global information networks; telecommunications, which enable long-distance communication; IT equipment and services, which provide the hardware and software necessary for digital operations; media and broadcasting, which disseminate information to mass audiences; libraries, which serve as repositories of knowledge; commercial information providers, which offer specialized data and analysis; network-based information services, which facilitate information sharing and collaboration; and other communication activities, which support the exchange of ideas and knowledge.

Aje and Chakwa (2019) offer a categorisation of ICT that distinguishes between telecommunications and computer communications. Additionally, it has been recognised that telecommunications encompass technologies such as digital and cellular phones, fibre optics, microwave technologies, satellite communication, digital broadcasting systems, and facsimiles (Zinia, 2024). All of these technologies play a crucial role in facilitating the deployment of knowledge and information, making it easier for individuals and organisations to access and share valuable resources.

The digital foundation of ICT enables efficient and high-quality data processing, allowing for the rapid manipulation and analysis of information. ICT also provides robust data storage capabilities, ensuring that information can be securely stored and retrieved (Kabeyi & Olanrewaju, 2023). Furthermore, ICT facilitates the seamless transmission of data across networks, enabling efficient communication and collaboration. Crucially, ICT provides connectivity, linking individuals, organisations, and systems across geographical boundaries. This connectivity allows geographically separated groups to function as a unified system, fostering collaboration and innovation through integrated technologies.

3.1. The Features of ICT and Its Components to Facilitate Corrupt Activities

Various initiatives have been implemented, including the establishment of legal instruments, the enactment of existing statutes, the creation of policies and protocols, and the adoption of conventions aimed at eliminating, or at least controlling, corrupt practices. However, the rapid development of ICT has introduced significant challenges that necessitate the establishment of a comprehensive framework to combat corruption (Annie, 2024). It has been observed that corruption has been aggravated by advancements in ICT. In this article, we will focus on the most relevant types of ICT, specifically Business Technology, Information Technology, Communication Technology, Operation Technology, Artificial Intelligence, and Blockchain Technology. Each type will be summarised, highlighting how the development of ICT impacts supply chain management, leadership, and transaction value. ICT is rooted in different disciplines such as information systems, human-computer interaction, communication studies, and development. However, it is necessary to present characteristics of technology based on the creation, accessibility, and expediency of their implementation in the transactions. The most characteristic lies in the digital nature as the foundation of the ICT system used to process information and store data.

Interoperability is a fundamentally critical characteristic of modern Information and Communication Technology systems. It is the property that guarantees that a diverse array of devices, software applications, and network infrastructures can function together in a harmonious and integrated manner, without encountering compatibility issues or functional limitations (Lindeburg, 2022). In essence, interoperability ensures that these disparate components work seamlessly together as if they were designed from the outset to be part of a unified system. A key aspect of interoperability is its facilitation of data exchange and processing (Guiochet et al., 2017). This data exchange relies heavily on the adoption and implementation of open standards and communication protocols, which act as common languages that different systems can understand and utilise (Harvie, 2024). By

adhering to these standards, different systems can effectively communicate and share information. The benefits of interoperability are manifold. It significantly enhances user access to information and services, regardless of the specific device or platform they are using. Furthermore, interoperability boosts overall productivity by streamlining workflows, reducing manual data entry, and minimising the need for complex workarounds.

Scalable systems are engineered to effectively manage and adapt to ever-increasing volumes of data, storage requirements, processing demands, and transmission loads (Bajpai, 2024). These systems are designed to accommodate significant growth in workloads and user requests, ensuring that they can handle increased activity without experiencing performance degradation or system instability (Sameer, 2021). Scalability is not just about handling more data; it's also about maintaining consistent performance, reliability, and availability as the system grows. Distributed computing architectures, such as those found in cloud computing environments, play a crucial role in enhancing the reliability of ICT systems (Hare, 2022). This dynamic resource allocation helps to prevent bottlenecks and outages, as resources can be automatically provisioned and de-provisioned as needed. Moreover, distributed architectures inherently provide redundancy, meaning that if one component of the system fails, other components can seamlessly take over its functions, ensuring continuous operation and minimising downtime (Sari & Akkaya, 2015).

Security is another critical characteristic of ICT systems, given the sensitive nature of the data it handles, the ICT systems must protect information from unauthorised access, modification, and disclosure (Zanin, 2024). Given the critical role of ICT systems in managing and processing sensitive data, security emerges as a paramount concern. These systems are entrusted with safeguarding information, making it necessary to protect this data from a range of potential threats (Hare, 2022). These threats include unauthorised access attempts, malicious alterations to the data, and the risk of unintentional or deliberate disclosure to unauthorised parties. To effectively mitigate these risks and ensure the confidentiality, integrity, and availability of the information, a multifaceted approach to security is required. This involves the implementation of a diverse set of security measures, each designed to address specific vulnerabilities and protect against particular types of threats (Sari & Akkaya, 2015). Among the most commonly employed and effective security measures are encryption techniques, which render data unreadable to unauthorised individuals; robust access control mechanisms, which restrict access to sensitive information based on user roles and permissions; the deployment of firewalls, which act as barriers against unauthorised network traffic; and the implementation of intrusion detection systems, which monitor network activity for suspicious behaviour and alert administrators to potential security breaches. Moreover, to maintain a strong security posture, all data gathered from various sources must be stored securely, employing appropriate security protocols and storage technologies to prevent unauthorised access and data loss. In addition to security, user-friendliness should be a high priority in the design and implementation of ICT systems (Nduhiu, 2024). The system should be designed with the user in mind, facilitating ease of interaction and intuitive navigation. To achieve this, it is important to develop an interface that is both visually appealing and easy to understand, with a clear and logical organisation of information and functions. Providing clear and concise instructions for using the system's features can significantly improve the user experience. Furthermore, the system should provide helpful and informative error messages when users encounter problems, guiding them towards resolving the issues and preventing frustration (Guiochet et al., 2017). By prioritising user-friendliness, ICT systems can ensure that users can effectively and efficiently utilise the system's capabilities, maximising productivity and minimising the learning curve.

Adaptability is a crucial characteristic of ICT that allows these systems to develop and adjust to changing user needs and technological advancements (Sameer, 2021). ICT systems must possess adaptability, a key attribute that ensures their continued relevance and effectiveness. This crucial characteristic enables these systems to evolve in response to shifts in user requirements and the ongoing progress of technology (Bajpai, 2024). Without adaptability, ICT systems risk becoming outdated and unable to meet the demands placed upon them. The adaptability of ICT systems is often facilitated by a modular design approach. This modularity allows for the updating or replacement of individual components within the system without disrupting the overall system operation (Annie, 2024). This means that improvements and enhancements can be implemented seamlessly, minimising downtime and maintaining system availability. Furthermore, modular design supports the integration of new features and functionalities into the ICT system. As technology advances and user needs evolve, new capabilities can be added to the system to enhance its performance and extend its lifespan. As Zanin (2024) states, the ability to adapt and incorporate new elements is a significant advantage of well-designed ICT systems. The flexibility afforded by adapting ensures that ICT systems remain valuable and effective tools, capable of meeting the challenges of a dynamic and ever-changing environment.

Reliability is a vital characteristic of ICT systems as well as it ensures that the functions are consistent and work accordingly (Hare, 2022). Reliability is crucial for consistent and dependable ICT system functionality (Gupta et al., 2024). It ensures expected system operation and service delivery without disruptions (Nduhiu, 2024). Key strategies to achieve reliability include fault tolerance, redundancy, and robust backups, which minimise failure impact and ensure service availability. Fault tolerance allows systems to withstand component failures without shutting down, often through automatic detection, isolation, and switching to backups (Annie, 2024). Additionally, Sameer (2021) demonstrates that "fault tolerance, redundancy, and backups minimise interruptions and prevent data loss, ensuring continued operation and access to services and data". Data restoration capabilities maintain business continuity and facilitate recovery from catastrophic events. These elements create a resilient and reliable ICT infrastructure capable of withstanding challenges and providing a stable platform.

Efficiency is another characteristic of ICT development as it enables the system to process and transmit large amounts of data quickly and accurately. The efficiency of a system is of paramount importance, fundamentally influencing its capacity to effectively handle, process, and transmit substantial volumes of data with both speed and precision. (Gushina & Vasilkov, 2014). This capability is not merely desirable but represents a cornerstone of ICT development, enabling advancements and innovations across various sectors. The central objective in the design and implementation of any efficient system revolves around the strategic optimisation of resource utilisation (Aje & Chukwa, 2019). This involves a concerted effort to minimise waste in all its forms, whether it be wasted computational power, storage capacity, or energy consumption, and to concurrently reduce operational and infrastructural costs. The enhanced efficiency translates directly into faster response times, allowing users and

applications to access and process information more quickly, thereby significantly enhancing overall productivity across the organisation or system (Gupta et al., 2024).

These defining characteristics underscore the critical importance of ensuring that the trajectory of ICT development incorporates systems equipped with robust monitoring capabilities that can track and analyse a diverse range of trends and patterns. This concern arises from the inherent involvement of both human actors and technological components within ICT systems, creating potential vulnerabilities that must be addressed. By proactively addressing this emerging challenge, ICT innovations can make a significant and valuable contribution to the ongoing fight against corruption. As well, such proactive monitoring is essential as a preventative measure, designed to detect and prevent potential instances of misuse that could, if left unchecked, escalate into corrupt practices. The specific ways in which ICT innovations contribute to this crucial battle will be explored and elaborated upon in greater detail in the subsequent section.

3.2. Assessments on the link between the Development of ICT and Corruption

Since it has been recognised that the use of ICT includes the use of information security, computer technical support, business software development and database, and networking management, some people with ill manners can misuse this opportunity for their capital gain as well (Sameer, 2021). Instances of corruption need to be demonstrated to determine if there is a correlation between the development of ICT and corruption. A wide range of offences against public officials, officials of a foreign state, and individuals have been criminalised through numerous national and international instruments. The use of information technology (IT) encompasses various aspects, including information security, technical support, business software development, database management, and networking (Annie, 2024). Unfortunately, some individuals with unethical intentions may exploit these opportunities for personal gain. To understand the relationship between the development of ICT and corruption, it is essential to examine instances of corruption. According to Article 4 of the African Union Convention against Corruption, the following acts are considered corrupt “the offering, giving, solicitation or acceptance directly or indirectly, or promising of any undue advantage to or by any person who asserts or confirms that he or she can exert any improper influence over the decision-making of any person performing (sic) functions in the public or private sector in consideration thereof, whether the undue advantages are for himself or herself or anyone else, as well as the request, receipt or the acceptance of the offer or the promise of such an advantage, in consideration of that influence, whether or not the supposed influence leads to the intended result”. The provision demonstrates that the development of ICT has a significant impact on creating new challenges for the fight against corruption.

The first issue discussed in this paper is the overcrowding of platforms. This platform, in one way or another, encourages corrupt behaviour in any society. This is identified by various forms of technology such as business technology, information technology, and communication technology—that have been introduced by ICT, each with its application systems playing their role in providing service through technology advancement (Charoensukmongkol & Moqbel, 2024). Currently, these forms pose challenges due to conflicting interests among individuals and discourage collaborative efforts. Humans are the creators of applications in business technology and are also responsible for providing solutions for selected applications. According to Charoensukmongkol and Moqbel (2024), crowdsourcing is a model where individuals or organisations obtain goods or services including ideas, voting, micro-tasks, and finances—from a large, relatively open, and often rapidly evolving group of participants. This approach makes it easier for individuals to disclose serious information or allegations regarding illegal, immoral, illicit, unsafe, or fraudulent activities within the private or public sector, thereby helping to prevent or stop such behaviour (Anne, 2024). For instance, in 2023, the FTX (a significant cryptocurrency exchange in the USA) was found guilty of fraud, where the conviction underscores the potential for misconduct within the industry and the need for investors to carefully assess the credibility and practices of digital asset platforms. The case highlighted serious misconduct at a major crypto platform and underscored the risks in the digital-asset market, reinforcing the need for stronger regulatory oversight and careful due diligence by investors.

As well, reports of corrupt activities are usually submitted anonymously by whistleblowers. While these reports may remain confidential, publicised cases can pose risks to those who report corruption. There is no need for multiple platforms with the same goal of fighting corruption (Harutyunyan & Schultz, 2015). A group of individuals with common interests can easily share information through the internet or phone. However, if security measures are poorly implemented, the risk of hacking or leaking personal information can jeopardise users and deter others from reporting issues. This, in turn, fosters an environment in which corruption can thrive.

The leakage of information poses a significant challenge that needs to be addressed. As previously mentioned, access to ICT platforms by certain individuals can exacerbate the issues related to corruption (Cheng et al., 2017). For example, in Tanzania, the government has established systems to ensure that there are adequate platforms for monitoring the activities of existing institutions and organisations. This initiative aims to ensure that these entities operate as intended (Tanzania National Evaluation Manual - Vision for 2050). By creating a centralised system, the government enables institutions and organisations to present relevant information on ongoing activities, upcoming events, the handling of specific issues, and the key personnel involved (The Digital Trends in Africa 2021). The primary goal is to achieve genuine accountability and transparency through a unified system. Additionally, it is noted that operational technology contributes to the challenges caused by the duplication of systems.

The existence of blockchain technology offers significant benefits; however, it also presents challenges, one of which is the potential for corruption. Blockchain is a decentralised and synchronised database maintained by a peer-to-peer network, allowing each user to have their own copy and access to the data (Charoensukmongkol & Moqbel, 2024). The process involves documenting the transmission and verification of all information, which results in the creation of a permanent record that can be utilised for cryptocurrencies. This system effectively mitigates certain risks associated with centralised governance. Similarly, Kshetri (2017) argues that “hence, using blockchain technology can increase transparency and prevent fraud and petty corruption, enhancing possible oversight and accountability”. Kshetri (2017) further says that “opportunity makes bribe markets

operate more efficiently, with uncertain effects that may facilitate irregularities”. The anonymity and reach afforded by these networks can be misused, for the recent and rapid expansion of ICT network connections symbolises progress and increased connectivity. For instance, Samradni (2024) explore that cryptocurrencies are innovations in payment systems that are safe, decentralised, and offer anonymity to their users. Unfortunately, criminals have also devised ways to exploit such benefits; though they have several applications in the real economy, Bitcoin and other cryptocurrencies have found their place in crimes within the hidden parts of the web. Additionally, she states that one of the major motives criminals use cryptocurrencies is the perceived anonymity they offer; however, the parties' names are unknown and are associated with anonymous numbers called cryptographic addresses. This means that criminals can easily avoid detection since no paper trail leads to them. In 2021, the FBI said ransomware cases went up by 62%. Many criminals asked for payment in cryptocurrency, like Bitcoin. One big attack was on the Colonial Pipeline, where hackers asked for millions in Bitcoin to unlock important systems.

Additionally, blockchain technologies can be exploited by wrongdoers to access confidential information, including details related to corruption. When unlawful individuals gain access to this information, they may inadvertently contribute to the perpetuation of corrupt practices (Mensah, 2023). Furthermore, it is noted that the advancements in ICT can create opportunities for systems to restrict access to information for those seeking details about officials involved in bribery, such as the number of bribes and the processes for making bribe payments (Sameer 2021). Blockchain has the potential to create new vulnerabilities for hackers and manipulators, which may shift corruption to other areas of government that are not yet digitised (Paal, 2022). Kossow and Dykes (2018) point out that “emerging technologies can facilitate the spread of false information”. They further argue that “these technologies lower transaction costs and make it easier to organise and sustain corruption”. Additionally, they emphasise that the government to enhance its ability to monitor criminal groups by improving the flow of information from society to authorities. Moreover, Bac (2001) asserts that “ICT may concentrate new, system-wide corruption opportunities in the hands of those few who have the right tech skills; and increased transparency can also facilitate corruption, for example, in public procurement by enabling bidders to more effectively identify which official to bribe”. Similarly, in 2022, the USA Treasury Department’s Office of Foreign Assets Control (OFAC) accused Tornado Cash of facilitating money laundering (Patairyra, 2025). The act of Tarnado allows deposits and withdrawals to different addresses, effectively anonymising the movement of funds within Ethereum. The Office sees the process as crucial for users seeking to enhance their financial privacy and shield their transaction history from prying eyes. According to the OFAC, Tornado Cash was facilitating anonymous transactions by obscuring their origin, destination and counterparties, enabling criminals to hide the proceeds of cybercrimes.

The blockchain involves technology that creates and maintains records to track orders, payments, accounts, and other transactions. This system helps reduce the likelihood of corrupt activities by limiting the discretion of government officials and establishing better mechanisms that allow for increased transparency (Saveo, 2005). Additionally, advancements in ICT can aid in the detection and prevention of corruption, particularly petty corruption, by enhancing government accountability and transparency (Campbell, 2024). These systems address the actions of officials who, directly or indirectly through an intermediary, request or receive any kind of advantage for themselves or a third party, or who accept a promise of such advantages. Importantly, the definition of wrongdoing includes not only the actions of officials but also those of any individual (Hare 2022). It is noteworthy that each of these forms of corruption appears to carry similar meanings, as they are often committed by both public and private officials who improperly and unlawfully enrich themselves for personal gain, perpetuating a cycle of corruption.

IV. CONCLUSION

The overall objective of development should be to create challenges that can be effectively addressed. The evolution of ICT has generated significant opportunities and challenges, making the fight against corruption one of the most pressing global issues. The risks associated with this challenge include undermining the rule of law and accountability, which can erode public trust in governments worldwide. The existence of corruption is recognised as a significant issue in the digital age. The development of ICT requires informed and balanced discretion in allocating resources to both officials and citizens. The theory of digital governance, often driven by the need for public efficiency and implemented by the government itself, enhances transparency by increasing access to information and accountability, which in turn raises the likelihood of detecting corrupt behaviours. Assessments reveal that while ICT development presents numerous opportunities for society—like leveraging technology to create applications that automate tasks—new challenges also emerge that can foster corruption. Individuals with IT expertise can exploit these developments, creating contexts where corrupt practices thrive. As previously mentioned, advancements in ICT carry both difficulties and opportunities. The impact of ICT on corruption can be either positive or negative, depending on the type of intervention, the channels of connection, and the specific context, as indicated by various studies. Importantly, the development of ICT facilitates information flow between governments and citizens, across government institutions, and among societal actors, thereby promoting transparency and accountability through the standardisation of government processes and limitation of discretion for both public and private officials. Nonetheless, research suggests that the rise of ICT also creates opportunities for illegal activities, as individuals or groups may choose to engage in corrupt practices.

REFERENCES

- Aje, S., & Chakwa, J. N. (2019). *Information communication technology and development in Africa*. Journal of Communication, 5(1). <https://www.iaajournals.org>
- Annie, B. (2024). *Data protection strategy: Key components and best practices*. <https://www.ibm.com>
- Bac, M. (2001). Corruption, connections and transparency: Does a better screen imply a better scene? *Public Choice*, 107, 89–106. <http://www.jstor.org/stable/30026256>
- Bajpai, M. (2024). *Implementing cloud operations process improvement for GCP*. SSRN Electronic Journal. <https://www.researchgate.net>
- Campbell, C. (2024). *What are the 4 different types of blockchain technology?* <https://www.techtarget.com>
- Charoensukmongkol, P., & Moqbel, M. (2014). *Does investment in ICT curb or create more corruption? A cross-country analysis*. <https://www.researchgate.net>
- Cheng, L., Liu, F., & Yao, D. D. (2017). Enterprises data breach: Causes, challenges, prevention, and future direction. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*. <https://www.researchgate.net>

- Corbo, A. (2022). *What is IT (Information Technology)?* <https://buiiltin.com/learn/it>
- Dugal, N. (2024). *What is artificial intelligence and why it matters in 2024?* <https://www.simplilearn.com>
- Guiochet, J., Machin, M., & Waeselynck, H. (2017). Safety-critical advanced robots: A survey. *Robotics and Autonomous Systems*, 94. <https://www.sciencedirect.com>
- Gunnell, M. (2023). *Operational technology.* <https://www.techopedia.com>
- Happy, S. (2023). *What is digital technology? Exploring types, evolution and a link.* <https://www.tffn.net>
- Hare, V. (2022). *What is interoperability and why is it important?* <https://cloudsecurityalliance.org>
- Harvie, L. (2024). *Implementing robust communications protocols for embedded devices.* <https://medium.com>
- Jafari, N. (2023). *The role of new ICT-based systems in modern management.* *Journal of Management and Organisation* (Special Issue).
- Kabeyi, J. B. M., & Olanrewaju, A. O. (2023). Smart grid technologies and applications in the sustainable energy transition: A review. *International Journal of Sustainable Energy*, 42(1), 685–704.
- Kaware, S. S., & Sain, S. (2015). ICT application in education: An overview. *International Journal of Multidisciplinary Approach and Studies*, 2(1), 25–32.
- Kossow, N., & Dykes, V. (2018). *Embracing digitalisation: How to use ICT to strengthen anti-corruption.* <https://www.giz.de/de/downloads/giz2018>
- Kshetri, N. (2017). Will blockchain emerge as a tool to break the poverty chain in the Global South? *Third World Quarterly*, 38(8), 1710–1732. <https://doi.org/10.1080/01436597.2017.1298438>
- Laguaitte, M. (2023). *Best communication technology examples to explore.* <https://www.yoodli.ai>
- Lindeburg, F. (2022). *Security by diversity: Designing secure, reliable and robust systems.* <https://labs.ripe.net>
- Mensah, G. B. (2023). *Artificial intelligence and ethics: A comprehensive review of bias mitigation, transparency and accountability in AI systems.* <https://www.researchgate.net>
- Nduhiu, J. (2024). *Scalability in IT: The complete guide to scaling.* <https://www.splunk.com/en>
- Sameer, P. (2021). *Crafting scalable systems: Practices, patterns, and principles – Part I.* <https://www.medium.com>
- Paal, B. P. (2022). Artificial intelligence as a challenge for data protection law: And vice versa. In S. Voeneky, P. Kellmeyer, O. Mueller, & W. Burgard (Eds.), *Responsible Artificial Intelligence: Interdisciplinary Perspectives*. Cambridge University Press.
- Patairya, D. K. (2025). *What is Tornado Cash and why did it get into trouble?* <https://www.cointelegraph.com>
- Sari, A., & Akkaya, M. (2015). Fault tolerance mechanisms in distributed systems. *International Journal of Communication Network*. <https://www.researchgate.net>
- Savelo, I. (2005). The rule of law: Principles, issues and challenges. In *Rule of Law, Legitimate Governance & Development in the Pacific*. <http://www.jstor.org>
- Schultz, D., & Harutyunyan, K. (2015). Combating corruption: The development of whistleblowing laws in the United States, Europe, and Armenia. *International Comparative Jurisprudence*, 1(2). <https://www.sciencedirect.com>
- Singh, A. (2022). *What is artificial intelligence? How does AI work? (AI types, history, and future?).*
- Tiwari, A. A., Gupta, S., & Zamani, E. D. (2024). An overarching conceptual framework for ICT-enabled responsive governance. *Information Systems Frontiers*, 26, 1161–1182.
- Vasilkov, Y., & Gushina, L. (2014). Analysis of the effectiveness and efficiency of management systems based on system analysis methodology. *International Journal for Quality Research*, 8(3).
- Zinia, Z. (2024). *What is the full form of ICT? Components and characteristics.* <https://www.naukri.com>

National and International Instruments:

- African Union Convention against Corruption (2001).
- American National Standards Institute, 1918.
- Digital Trends in Africa (2021) 49.
- Global Surge of ICT: Assessing Growth and Diffusion, 2023.
- National Evaluation Manual- Vision for 2050.
- SADC Model Law on Electronic Transactions and Electronic Commerce, 2013.
- United Nations Conference on Sustainable Development, Rio +20.
- World Summit for Social Development, 2003.