Agpaytech's Research
2nd February, 2024

Unlocking Regulatory, Technical and Network Interoperability for Cross-Border Payments

Agpaytech

Executive Summary

This research addresses the critical challenges hindering the efficiency of cross-border payments in Africa by focusing on cracking regulatory, technical, and network interoperability. As the African continent experiences rapid economic growth and increased trade activities, the need for seamless and secure cross-border transactions becomes paramount. This research seeks to provide insights and recommendations to foster a conducive environment for improved interoperability, ultimately enhancing the overall financial infrastructure in the region.

Regulatory Landscape

This includes an assessment of compliance requirements, legal constraints, and policy inconsistencies that may impede interoperability between systems, firms, and countries for cross-border business and transactions.

Technical Infrastructure

The report found that the technical aspects of cross-border payment systems, including the compatibility of different platforms, protocols, and standards. Assessing the current state of technology adoption and identifying potential advancements to facilitate interoperability across diverse financial systems..

Network Connectivity

The study evaluated the existing network infrastructure and connectivity across African countries, with a focus on identifying challenges and opportunities for creating a seamless cross-border payment network. This includes assessing the role of financial institutions, payment service providers, and telecommunications companies in facilitating interoperability.

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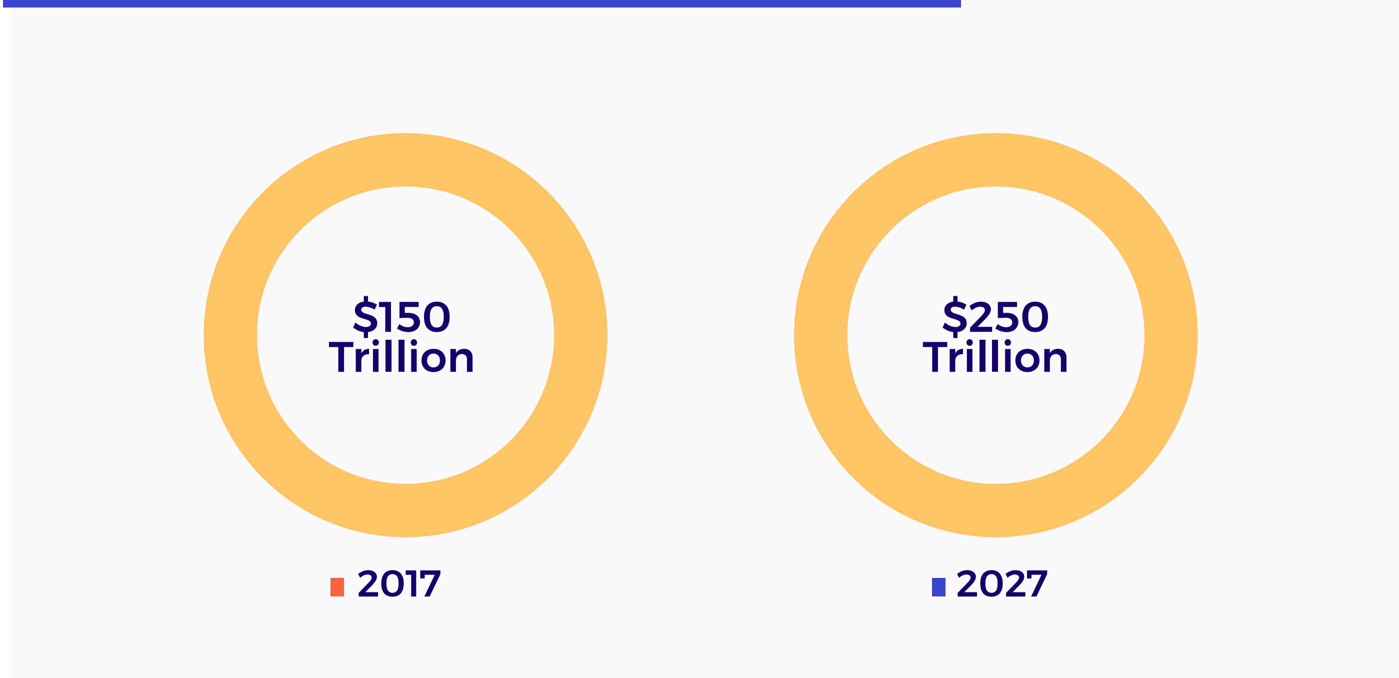
Introduction

The value of cross-border payments either in wholesale or retail keeps growing due to increased mobility of goods and services, capital, and people (migration). Cross-border e-commerce and fast logistics services are becoming more modernized. Enhancing cross-border payments is a multi-dimensional task collaboration across jurisdictions and between public and private sectors. According to the Bank of England, the value of cross-border payments is estimated to increase from almost $150 trillion in 2017 to over $250 trillion by 2027, equating to a rise of over $100 trillion in just 10 years. The world can achieve more of these projected values through interconnected payment systems for societal progress and economic growth. To truly advance inclusion, the financial systems must be designed and deployed in a way that includes everyone, protects consumers, and bolsters competition and innovation. One of the ways is through sustainable interoperability of the payment ecosystem by ensuring systems and devices can work together seamlessly, which plays a pivotal role in fostering digital inclusion.

Figure 1: Cross-border transaction by 2027



Source: Bank of England

Why Cross-border Payments Still a Challenge?

The value of cross-border payments either in wholesale or retail keeps growing due to increased mobility of goods and services, capital, and people (migration). Cross-border e-commerce and fast logistics services are becoming more modernized. Enhancing cross-border payments is a multi-dimensional task collaboration across jurisdictions and between public and private sectors. According to the Bank of England, the value of cross-border payments is estimated to increase from almost $150 trillion in 2017 to over $250 trillion by 2027, equating to a rise of over $100 trillion in just 10 years. The world can achieve more of these projected values through interconnected payment systems for societal progress and economic growth. To truly advance inclusion, the financial systems must be designed and deployed in a way that includes everyone, protects consumers, and bolsters competition and innovation. One of the ways is through sustainable interoperability of the payment ecosystem by ensuring systems and devices can work together seamlessly, which plays a pivotal role in fostering digital inclusion.

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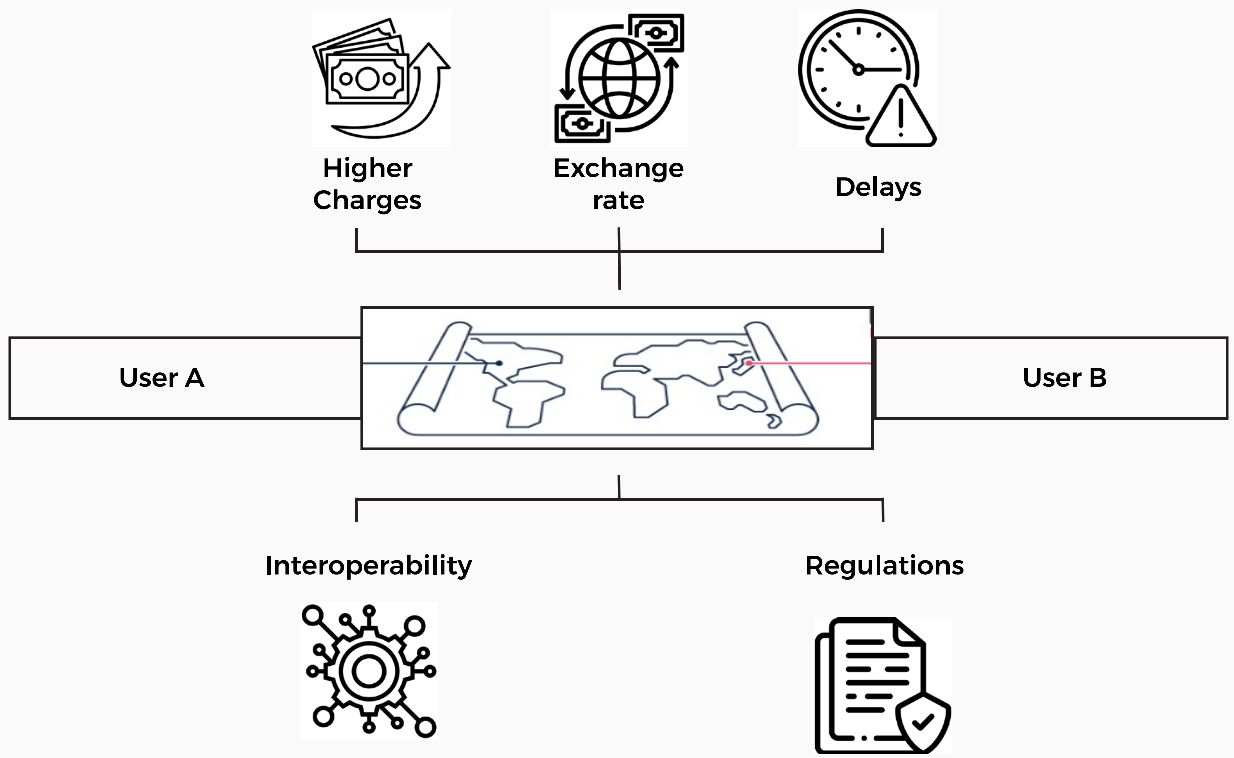
Figure 2: Cross-border payment challenges



Source: Agpaytech

Digital Inclusion and Interoperability Outlook 2024

The quest to bring together all players in the business ecosystem remains unreached in Africa. Many individuals and businesses do not have equitable access and use of digital technologies in the finance market. However, the situation is better for bulk money transfers due to the adequate availability of real-time gross settlement systems (RTGS) in many countries. Yet, the person-to-person and retail instant payments that connect small businesses and consumers dissuade many from engaging in cross-border trade.

Therefore, the ability of different systems to communicate and exchange data effectively is a critical component in achieving this goal. The goal of achieving digital inclusion and interoperability enables diverse devices, platforms, and services to connect, creating a more accessible environment for users to trade, remit money, and pay bills.

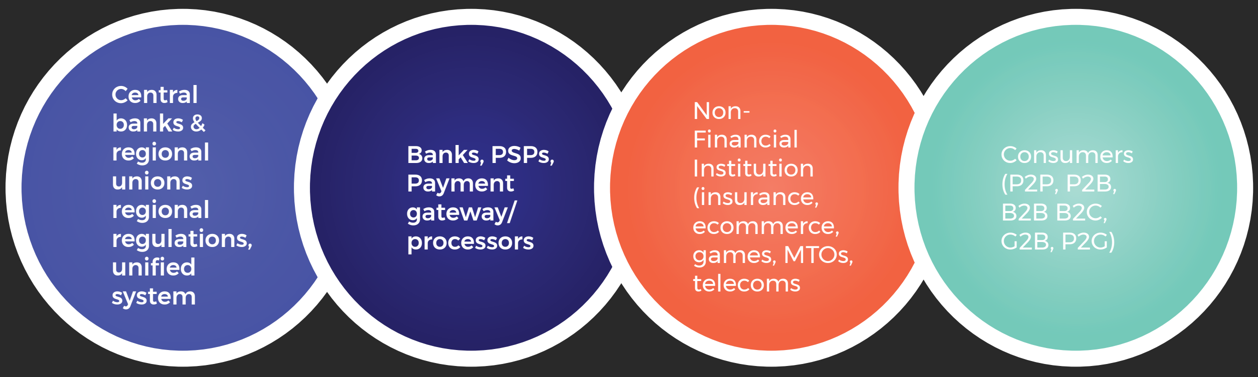
Table 1: Interoperability goal

B	A	S	I	C
Borderless business	Automated	Security & Speed	Interoperability	Customized
No restriction to accessing the system due to location, time, type of phone, or language	Payment transactions via the electronic system need to be instant, or fast. This could be a common virtual card	Send or receive payments without fear and with no delays.	The ability of different systems, players, technologies, and end-users to connect and access the infrastructure.	Customized to accommodate language barriers and limits, all business models in each African country

Source: Agpaytech

Achieving the BASIC goal of interoperability in payments in 2024 is a collective effort that includes various stakeholders like Fintech firms, banks, non-banks, mobile banking apps, e-commerce platforms, consumers, businesses, telecommunication networks, money transfer operators, and others.

Figure 3: Key players for interoperability



Source: Agpaytech

Interoperability in Focus

Digital inclusion and interoperability remain a challenge in the African region. This is characterized by a myriad of technological infrastructure devices, applications, platforms, internet network coverages, regulations, language, and monetary unions. However, the lack of interoperability often results in siloed systems, leading to fragmentation and limited accessibility for users. Different standards, proprietary technologies, and closed ecosystems pose barriers to seamless interaction and hinder widespread adoption.

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Figure 4: Interoperability challenges

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- Infrastructure devices
- Applications
- Internet coverage
- Regulations
- Language
- Monetary unions

Source: Agpaytech

Digital Public Payment Infrastructure is key to Interoperability

Many central banks in Africa have set up subsidiaries of innovative centers like India's NPCI to develop a robust instant retail payment system like the Central Bank of Ghana's GhIPSS and the Central Bank of Nigeria's NIBSS. Overseeing robust technological and efficient payment systems, these institutions are encouraged to lead cross-border payment integrations (UPI, Pix, PromptPay, Alipay+, etc.) capable of universal interoperability by all participating banks, Fintechs, MNOs, and NFIs.

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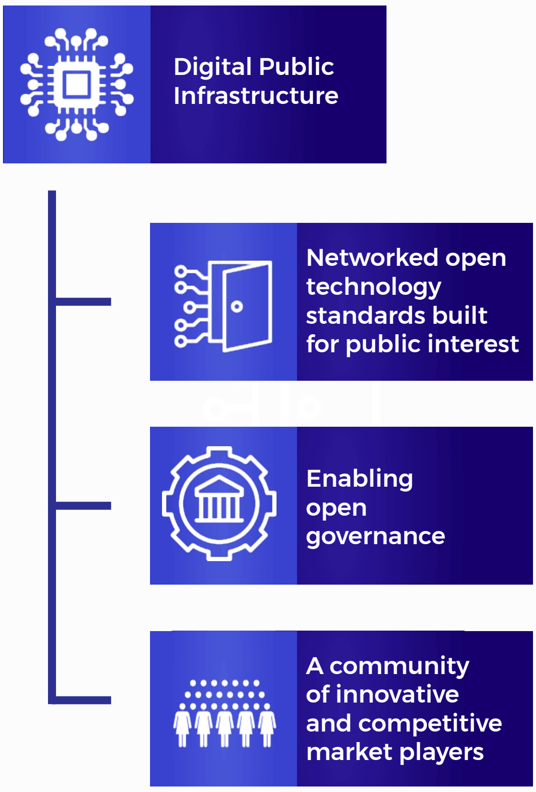
These state-owned digital infrastructures popularized as Digital Public Infrastructure (DPI) have the potential to contribute to regional trade among micro, small, and medium-sized enterprises (MSMEs) businesses. This is because producers, sellers and buyers connect on digital platforms to explore opportunities, make transactions, and complete trade requirements which secured, trustworthy, and often characterized by lower transactional charges.

DPI has now become a critical enabler of digital transformation and is helping to improve public service delivery at scale. Designed and implemented well, it can help countries achieve their national priorities and accelerate the Sustainable Development Goals. Governments, donors, the private sector, and civil society alike have an opportunity to shape it. The initiative of DPI is a bedrock of technical, network and regulatory interoperability. The DPI facilitates a growing consensus by interlinking payment systems within and from international countries to promote cross-border payments and business.

Figure 5: DPI role in interoperability



Source: Agpaytech

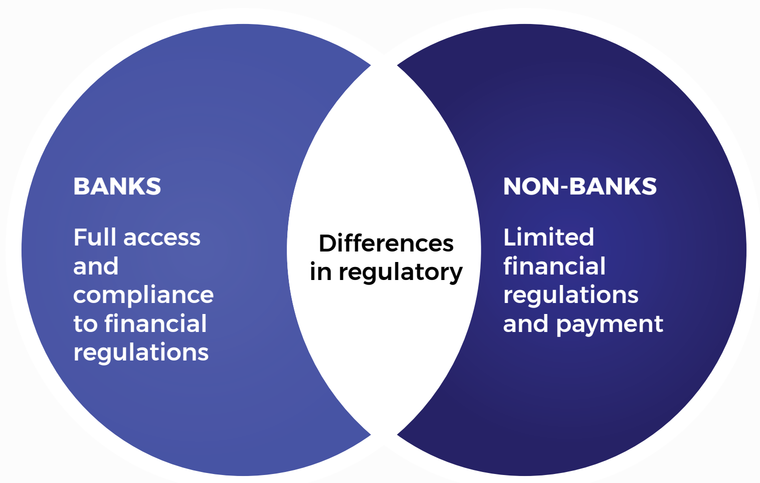
Unlocking the Regulatory, Technical and Network Interoperability

Regulatory Interoperability

Regulatory interoperability in payment systems refers to the compatibility and harmonization of regulations and standards across different jurisdictions or regions to facilitate seamless and efficient cross-border or cross-platform transactions. Monetary unions (SADC, WAEMU, EPAC, etc,) or countries (Kenya, Ghana, Nigeria, etc.) in Africa have their own set of rules, regulations, and technical standards governing financial transactions. Regulatory uncertainty deters financial and non-finance market stakeholders from entering new markets. Countries in Africa differ in legal and regulatory framework due to differences in the infrastructural and approach to business development. Some of the variations arise in areas such as licensing requirements, consumer protection regulations, AML/CFT measures, data privacy laws, and transaction monitoring standards. Inconsistencies are particularly pronounced among new entrants and innovative technologies where there is limited or no regulatory precedent to follow and risks to financial systems and customers are not yet apparent.

However, with the global nature of commerce and the increasing trend of cross-border transactions, ensuring interoperability between these different regulatory frameworks is crucial. By fostering regulatory interoperability, the aim is to promote efficiency, reduce costs, enhance transparency, and ultimately enable smoother and more accessible cross-border transactions for businesses and individuals alike, while ensuring compliance with regulatory requirements in various jurisdictions.

Figure 6: Regulatory interoperability



- Strengthen regulatory collaboration
- Modernize regulatory framework

- Encourage private-public partnerships
- Implementing Union agreements

Source: Agpaytech

Network Interoperability

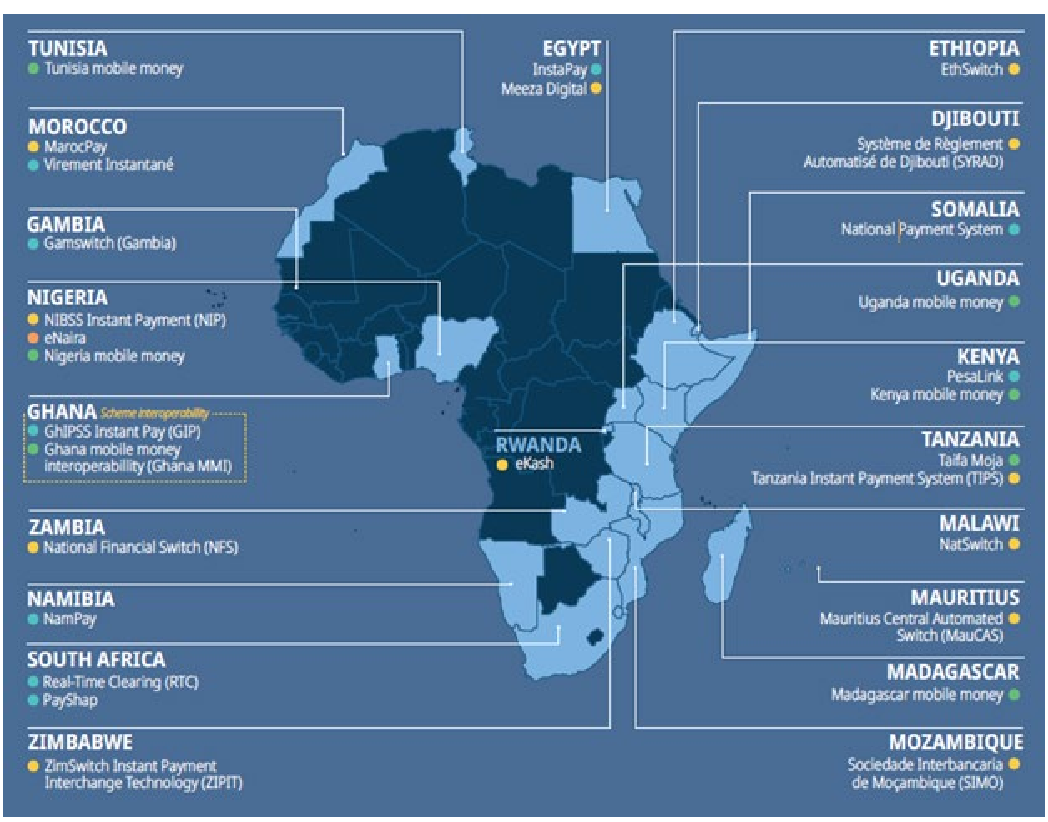
Network interoperability is the ability for multiple parties to connect through a network that facilitates payment transactions. It involves the compatibility and integration between various payment networks, allowing them to interconnect and facilitate the transfer of funds or data between different entities, such as banks, financial institutions, merchants, and consumers. Many countries are establishing national faster or instant payment systems (IPS) such as India's Unified Payment Interface (UPI). IPS is crucial to deepening financial and digital inclusion. According to AfricaNenda (2023), 32 IPS systems in Africa processed nearly 32 billion transactions worth close to $1.2 trillion in 2022. The IPS in Africa have capabilities to work efficiently in the domestics, but a strong interest in these technological innovations is not working together across borders. Inter-network connections through a "network of networks" among different countries are important in this era of payment globalization. Efforts to promote interoperability in payment systems aim to create an environment where users have the flexibility to choose different payment methods and platforms while ensuring security, efficiency, and reliability in transactions across interconnected networks.

Figure 7: Network interoperability factors

Compatibility	Different payment networks (such as credit cards, debit cards, mobile wallets, Automated Clearing House (ACH), etc.) can work together, allowing users to initiate transactions across various platforms or systems.
Seamless transactions	Users can transfer funds or make payments regardless of the specific networks or platforms used by the sender and the receiver. For example, a customer using one bank's mobile app should be able to send money to someone who uses a different bank or payment service provider's platform.
Enhanced access and Convenience	Interoperability fosters broader access to financial services, allowing customers to transact with a wide range of merchants and users regardless of the specific payment systems they are using.

Source: Agpaytech

Figure 8: DPI networks in Africa



Source: AfricaNenda

Technical Interoperability

Technical interoperability in payment systems refers to the ability of different systems, technologies, or platforms involved in financial transactions to communicate, exchange data, and work together seamlessly. It ensures that diverse systems used by various financial institutions, banks, payment service providers, and other stakeholders can effectively interact and transact with each other. Technical interoperability is crucial in modern payment systems as it facilitates smoother transactions, enhances convenience for users, reduces transaction costs, and promotes innovation by allowing different parties to collaborate and create new services or products within the financial ecosystem. The question of whether the various payment infrastructures among the African countries are technically interoperable is more necessary now than ever. There are various payment facilities due to the design and architectural technicalities that make it complex to link to other country's payment systems.

- **Standardization:**

  Establishing common technical standards, protocols, and formats for data exchange and communication between different systems. This enables consistency and uniformity, allowing disparate systems to understand and process information uniformly.

- **Compatibility:**

  Ensuring that different systems or components can work together without conflicts or issues. Compatibility involves designing systems with interfaces or APIs (Application Programming Interfaces) that allow them to interact and share information effectively.

- **Data Exchange:**

  Facilitating the smooth transfer and sharing of data between various systems involved in the payment process. This involves ensuring that data can be understood and utilized across different platforms without loss or misinterpretation.

- **Security and Authentication:**

  Implementing secure mechanisms for authenticating and authorizing transactions across different systems to maintain the confidentiality, integrity, and reliability of financial data.

- **Scalability:**

  Ensuring that the systems can handle increasing transaction volumes and accommodate future technological advancements without major disruptions to their interoperability.

Why Interoperability Matters in 2024

Having a firm understanding of the payment system's current context and the goals or use cases that interoperability targets is always a vital first step in any successful interoperability initiative. offer a unique opportunity to link payment systems that require speed or availability and can also be used to bridge interbank payment systems and their participants with closed-loop networks offered by non-banks. Fast payment interoperability offers the possibility to shut down or replace legacy payment systems over time, provided that this is desired by market participants. This could be achieved by consolidating different payment types on a single technical platform or by migrating payment to a unified platform system.

Today, several digital payment infrastructures are linking up their services for easy cross-border remittance and trade activities worldwide. The case of digital public infrastructure (DPI) linkage is slow in the African region. There are many disintegrated central banks and regional economic RTGS in Africa. Among the key regional payment systems include South African Development Community (SADC) RTGS, East African Payment System, Central Africa's Système des gros montants automatisé (SYGMA), West African Economic and Monetary Union (WAEMU), Common Market for Eastern and Southern Africa Regional Payment and Settlement System (COMEA-REPSS), The West African Economic and Monetary Union (WAEMU)/Union Economique et Monetaire Ouest Africaine (UEMOA) regional gross payment system, Pan African Payment and Settlement System (PAPSS). With growing national payment initiatives across African countries such as South Africa's PayShap, Ghana's GhIPSS GhanaPay, and NIBSS Instant Payment (NIP) and high adoption rates of banks, PSPs, NFIs, etc, interlinking payment systems among countries should be a topmost priority to foster smoother and faster cross-border transactions. This can significantly boost bilateral trade by simplifying payment processes and reducing transactional barriers.

Conclusion

Unlocking regulatory, technical, and network interoperability is essential for realizing the full potential of cross-border payments in a rapidly evolving global economy. This research underscores the importance of addressing regulatory complexities, technical challenges, and network fragmentation through coordinated efforts among stakeholders. By implementing the recommended strategies, the international community can pave the way for a more efficient, secure, and interconnected cross-border payment landscape. The following measures were suggested:

- **Harmonizing Regulatory Standards**: Encourage international collaboration to establish harmonized regulatory standards for cross-border payments, promoting transparency, compliance, and interoperability. Regulatory bodies in Africa should work collectively to streamline processes and eliminate unnecessary barriers.

- **Developing a Unified Technical Framework:** Promote the adoption of a standardized technical framework for cross-border payments, ensuring compatibility and security across diverse technological infrastructures in all the major payment corridors in Africa. Industry stakeholders should collaborate to establish protocols that facilitate the seamless exchange of information.

- **Facilitating Network Collaboration:** Encourage collaboration among financial institutions, payment service providers, and regulatory bodies to create a more interconnected global payment network. This collaborative effort will contribute to the development of a robust, efficient, and secure cross-border payment ecosystem.

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ABOUT AGPAYTECH LTD.

Agpaytech Ltd. is a company pioneering in the Fintech space with a focused approach to building robust technologies for e-commerce Card Processing Solutions for Payment Service Providers (PSPs). Additionally, we provide Compliance and Regulatory Umbrella, Remittance-as-a-Service (RaaS), Banking-as-a-Service (BaaS), Foreign Exchange, Cross Border Payments, and digital currency technology.

We also provide practical white paper research support to central banks, government and private institutions, economic organizations, and NGOs in Africa. Our services expand from research projects, state-of-industry reports, project assessment, data collection, and consulting services in the fintech space.

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