Agpaytech's Research
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Streamlining Remittances & Cross-Border Payments with Digital ID in the African Region

Agpaytech

Executive Summary

The World Bank and ID4D (2021) estimated that approximately 850 million people in the world do not have an official ID, and over 90% of this total represents people living in lower-middle-income and low-income countries. Around half of these 850 million are children, and half live in Sub-Saharan Africa. Agpaytech found that people who are ID-marginalized do not have bank accounts and most are excluded from personalized digital financial services.

In the African Region, National Identification Cards have undergone a considerable transformation; simple paper documents designed for single identification applications have given way to smarter documents in the form of biometric cards. Recently, several African countries are gearing towards digital or electronic identifications (e-IDs), which include a microprocessor for more robust document verification, online authentication, and signature. The development of these government-issued IDs means a single card can offer many applications from acting as a driver's license, enabling the user to file their taxes, or giving them access to state benefits and countless financial services including cross-border verifications and easy onboarding.

Using secondary data from multiple white sources, this study found that several African countries have adopted some form of digital identity (ID) system for civil registration, including birth, national IDs, and voting purposes, incorporating biometrics such as fingerprint, facial, or iris recognition as a form of authentication. Our field study revealed that most digital IDs are designed on three core principles; ID for the system, around the system. and on the system. Such IDs framework would integrate and improve financial and non-financial services.

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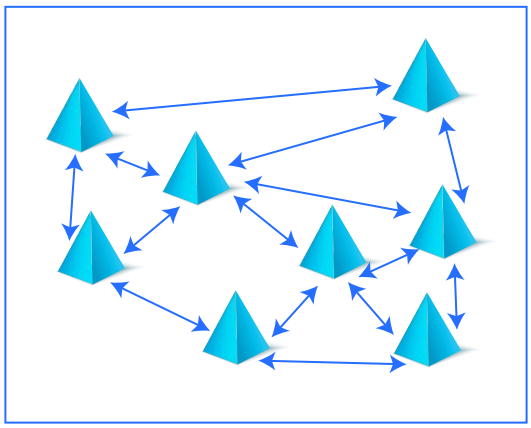
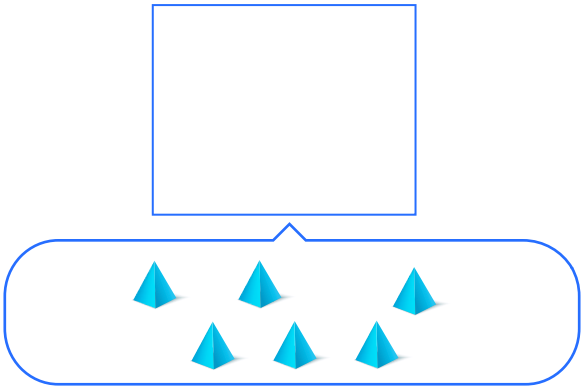
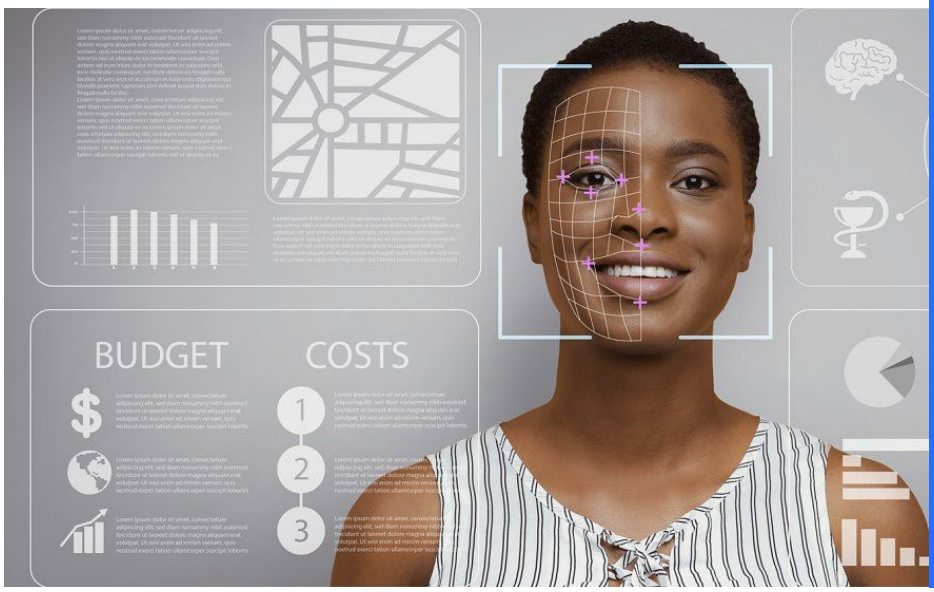


Building an ID around the system



Building an ID on the system

Introduction

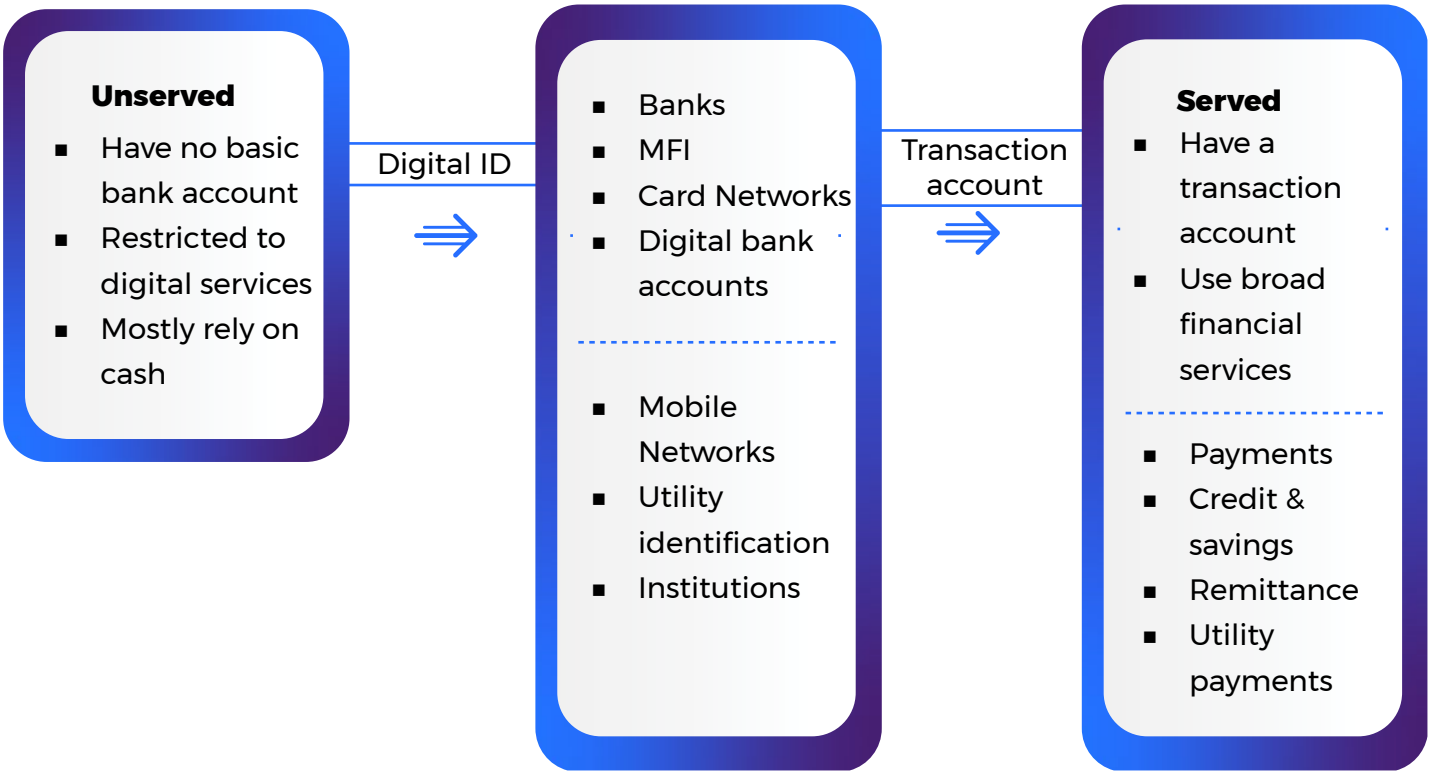


> *Digital identity platforms are the foundation for a frictionless and trusted digital user experience, whether that's for online banking, customer onboarding, or other applications.*

Digital identity or electronic identity (e-ID) is increasingly important in today's interconnected world, where individuals interact with various online platforms, services, and systems. It plays a vital role in enabling secure and trusted transactions, protecting sensitive information, preventing fraud, and ensuring regulatory compliance. In many countries across Africa, identity systems have largely been paper-based. However, the lack of trusted identifications (IDs) remains one of the major obstacles to financial inclusion across the world. People without trusted IDs are unable to prove their identity (ID), and millions more have forms of identification that cannot be reliably verified or authenticated, resulting in exclusion from economic and emerging digital opportunities. As of 2021, the World Bank and ID4D estimated that approximately 850 million people in the world do not have an official ID, and over 90% of this total represents people living in lower-middle-income and low-income countries. In addition, around half of these 850 million are children, and half live in Sub-Saharan Africa. Besides, World Bank (2018) and Metz and Clark (2019), analysis using the ID4D-Findex survey data also shows that the remaining ID coverage gap is largely concentrated among potentially disadvantaged groups, including women, younger people, less educated people, rural dwellers, and those living in poverty.

A unique, legal digital identity is necessary to allow all individuals to participate fully in the digital society and economy. Digital identity platforms are the foundation for a frictionless and trusted digital user experience, whether that's for online banking, customer onboarding, or other applications. Digital identity gives customers the ability to switch smoothly between service platforms without having to re-enter their identity and also makes it easier to access value-added services such as credit applications, mortgages, and lending without frequent authentication requests that put some customers off.

Figure 1: e-ID connecting financial & non-financial sector



Source: Agpaytech

Multiple Identification Systems: Making a Case for E-ID

There are several identification systems or cards that institutions recognized for some specific purposes only in Africa. The institutions mostly categorized the required documents for proof of identification. Some organizations like banks, non-banks, MNOs, and others demand birth certificates, passports, voters' IDs, or utility (electricity or water) bills for proof of identity in most of Africa. Such aforementioned identities may lack a variety of personal attributes for effective tracking and identification such as the biodata data (name, age, gender, address) and biometric data (fingerprints, iris scans, handprints) as well as other attributes that are more broadly related to what the person does or something someone else knows about the individual.

Such inconsistency and lack of regional recognition of the multiple identifications system in the African region limit cross-border financial and identification activities. The non-biometric nature of the IDs makes it incredible to share for wider usage and identification in other countries. This has necessitated the need for digital ID that encompasses the information, attributes, and credentials associated with a person or entity that are used to establish and verify their identity in the online world. It is worth noting that digital identity raises concerns about privacy, data protection, and security. Proper safeguards and protocols should be in place to protect individuals' personal information and ensure responsible handling and use of digital identity data

Figure 2: Connecting payment and non-payment IDs

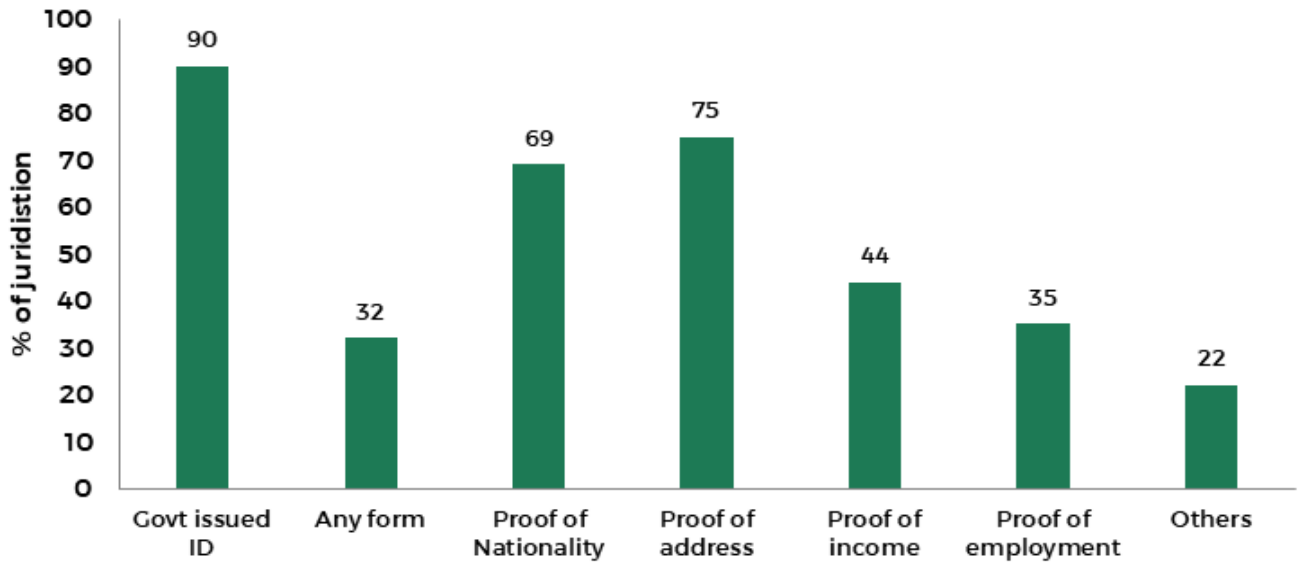
Non-payment ID	▪ National ID ▪ Health ▪ Driver license ▪ Voter ID Card	▪ Passport Card ▪ Institutional-based Card ▪ Mobile
Payment ID	▪ Credit Card ▪ Debit Card ▪ PIN ▪ Passbook/Cheque	▪ Account number/BIN

Source: Agpaytech

Identifications and Usage Acceptance

Many jurisdictions require customers to provide additional information beyond basic identification to open an account. However, the ability to securely validate and verify a customer's details against a reliable database remains imperative, and a large portion of those in the developing world lack basic IDs. The ability to prove one's identity is increasingly recognized as the basis for participation in banking and payment service systems. The following graph depicts the different documentation requirements required for opening a transaction account based on data collected from 124 separate jurisdictions.

Figure 3: ID usage by the issuer



Source: ID4D 2017 Survey

Focus on Digital Identification

Digital or electronic identity (e-ID) refers to the digital representation of an individual, organization, or entity within the digital realm. A digital identity is a collection of electronically captured and stored identity attributes that uniquely describe a person within a given context and is used for electronic transactions. It provides remote assurance that the person is who they purport to be. A digital identification system refers to the systems and processes that manage the lifecycle of individual digital identities. In the digital context, a digital identity typically consists of various components.

Table 1: Characteristics of the Digital ID

Key features	Definition	Examples
Identity Information	This includes personally identifiable information (PII) of the ID holder	Name, sex, date of birth, address, contact, nationality, city, landmarks
Authentication Credentials	These are the credentials used to prove one's identity and gain access to digital systems or services.	usernames, passwords, PINs (Personal Identification Numbers), and security tokens.
Biometric Data	Biometric data refers to unique biological characteristics or behavioral patterns that can be used for identity verification.	fingerprints, facial voiceprints, recognition, iris scans
Digital Certificates	Digital certificates are cryptographic tools that help verify the authenticity and integrity of digital identities.	Contain information on the true identity of the individual or organization, a public key, and the digital signature of the user.
Authorization and Permissions	Digital identity can also determine the access rights and privileges associated with a particular identity, specifying what resources or services the identity is	Digital tokens or keys permitted to assess PIN

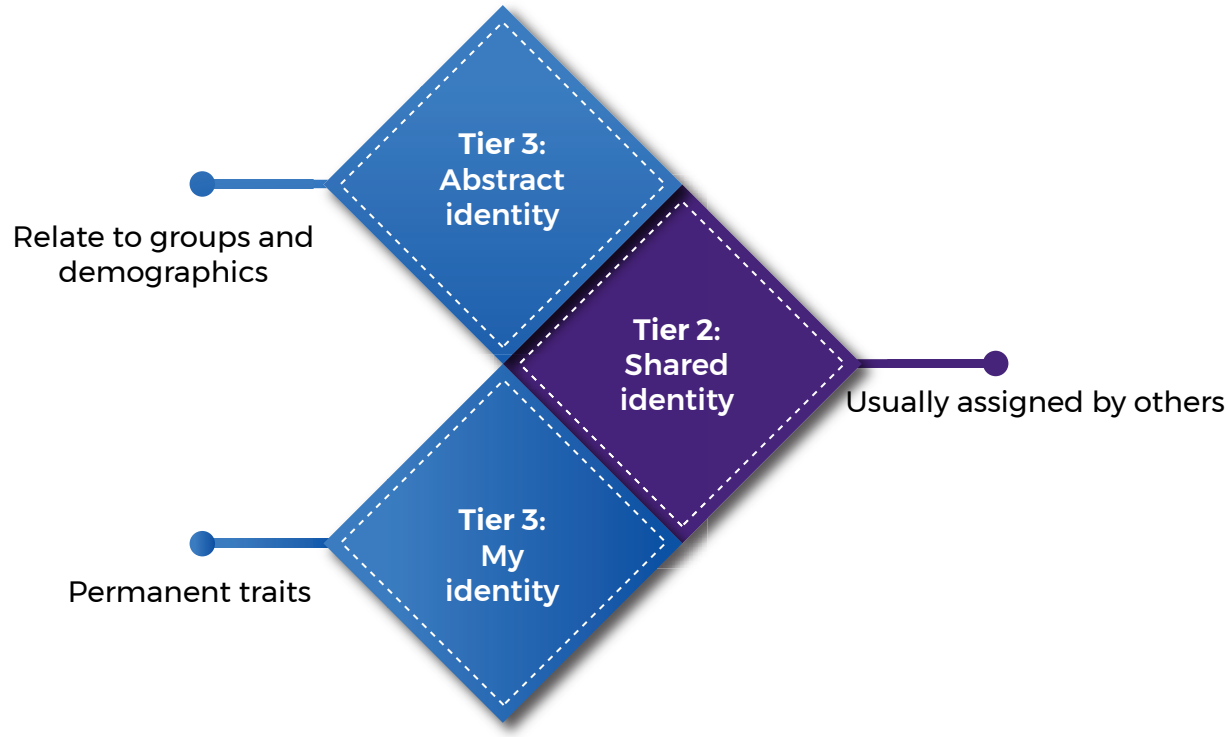
Source: Agpaytech

Designing a successful Digital ID

People have multiple identities depending on the relationship they connect with others. The information an employee would give to an employer is different from the study admission application. Designing a successful digital ID should contain a cluster of attributes with different tracking dimensions and security. The CEO of Ping Identity proposed three concepts of tiers of identity. Tier 1 "My Identity" consists of traits associated with the subject that are both timeless and unconditional. They are permanent and do not change with time, and examples include a person's name, sex, color, height, and so on. Tier 2 is labeled as "Shared Identity", and it is assigned to us by others. They are temporary and can be changed with time or as the individual wishes. Examples include

driver's licenses, employee/student numbers, voters card, mobile phone numbers, bank account numbers, and other assigned identities. Such identities can be terminated at any time or when the main purpose of the use is expired. Lastly, there is the topmost layer called "Abstracted Identity", which largely relates to a group or institutional identity such as region, job rank, education, or color.

Figure 4: Digital ID tiers and relationship



Source: Agpaytech

Why would Digital ID be useful to the financial system?

Identity is integral to providing and obtaining financial services and is needed at various transaction points when using financial services. During account opening, a customer is required to provide credentials to establish identity so that the financial service provider (FSP) can carry out customer due diligence (CDD) procedures. These credentials then need to be validated and allow the FSP to link and match information gathered from other sources of information such as credit bureaus to validate the information provided and assess the suitability of the product to the individual. Once complete, a transaction

> *"Once complete, a transaction identifier may be issued (for example a debit card and PIN), to be used for authentication in future transactions or access to other services."*

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In today's digital world, almost all IDs are physically incorporated with virtual codes (bar codes or QR codes). Such identities are often accepted in the financial market in a few jurisdictions and cannot be used for cross-border or multi-purpose transactions. According to the 2017 Global Findex Survey, the lack of documentation was the primary barrier to access to financial services cited by 26% of unbanked individuals in low-income countries. Beyond extending legal ID to address these gaps, the introduction of a legal, digital ID could potentially increase the adoption of financial services, broadening the financial inclusion agenda and supporting development goals.

Digital ID lowers barriers by making it easier for the unbanked to open a transaction account in conjunction with simplifying documentation requirements. Moreover, enabling more cost-effective customer onboarding that can be conducted remotely and contributes to financial sector embedding by supporting the delivery of additional services to the individual.

With a fast and secure digital identity, banks, and other businesses can offer a smooth user experience by ensuring that the user reaches A to B in a frictionless way. All the while the user remains in the bank's brand without interruptions. Digital identity gives customers the ability to switch smoothly between service platforms without having to re-enter their identity and also makes it easier to access value-added services such as credit applications, mortgages, and lending without frequent authentication requests that put some customers off.

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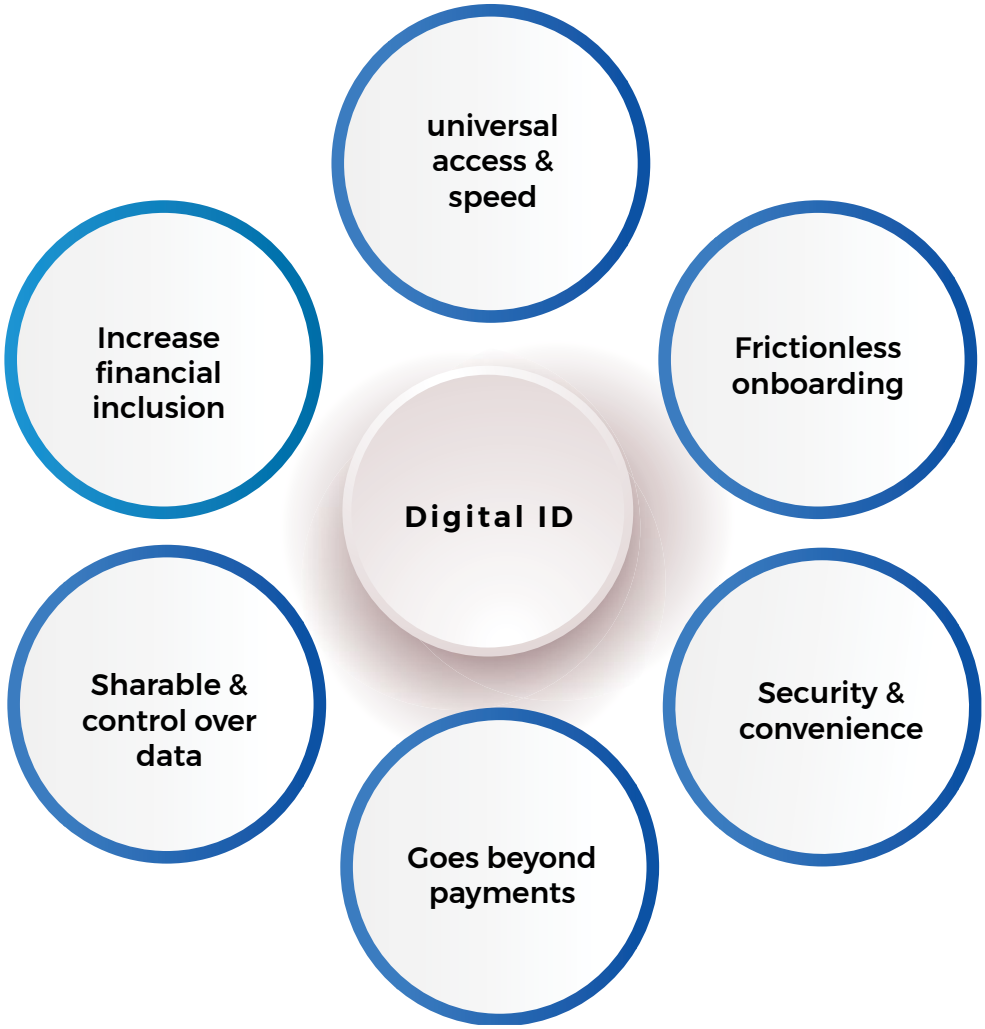
Figure 5: e-ID application financial system

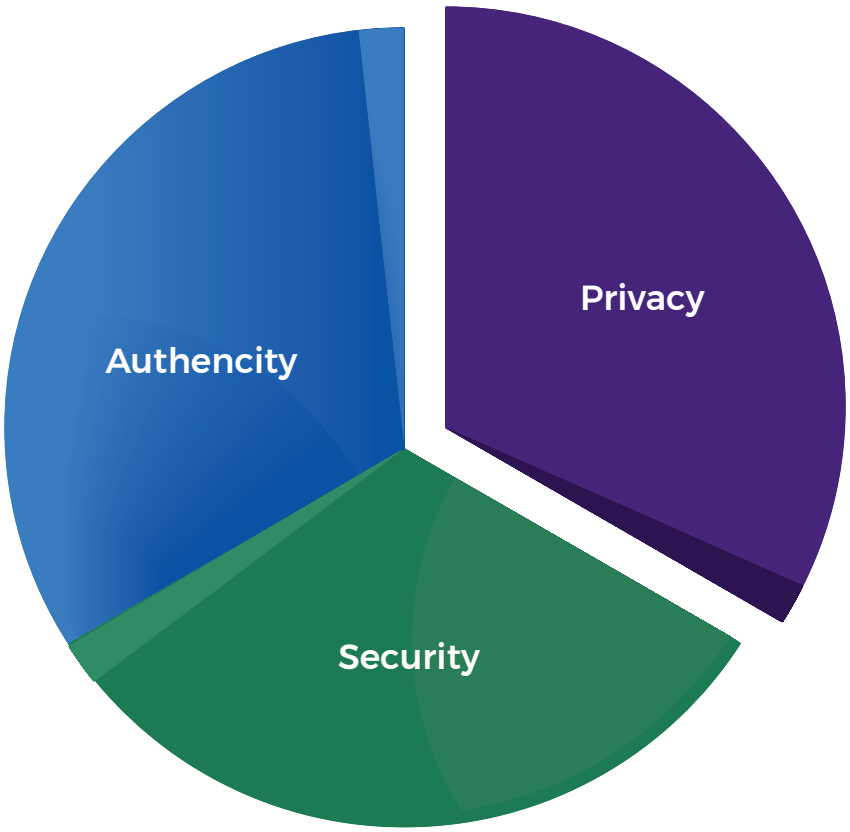


Source: Agpaytech

Leveraging on Digital ID to Enhance Customer Experience

Digital identity has many benefits for any company that wants to future-proof their digital transformation. For the customer, it improves the online shopping experience and increases brand loyalty. This is done by providing a single, user-friendly, and flexible way to access multiple services through one platform. For the company, digital identity improves some of the manual processes associated with onboarding, identification, and authentication. Simultaneously, digital identity reduces fraud, which boosts overall operational efficiency.

Figure 6: Core e-ID principle



Source: Agpaytech

Privacy, authenticity, and confidentiality as a feature of a digital ID create a trade space. Since confidentiality is easily achieved through encryption, other banking laws include provisions known as Know Your Customer (KYC) and Anti-Money Laundering (AML). KYC requires that banks be able to identify the parties to transactions. The purpose is to enable law enforcement to determine the actors behind transactions deemed illegal (hopefully with a warrant). So, banking transactions are strong on authenticity but weak on privacy. With the introduction of digital ID, the mode of authentication can be integrated into all or some of the following features

- Demographic Authentication
- One Time Pin based Authentication
- Biometric-based Authentication (Fingerprint, Iris, and Facial Image)
- Multi-factor Authentication

Improving Remittance and Cross-border Payment with Digital ID

The integration of digital ID into cross-border payment systems can have several significant impacts. Digital identity can play a significant role in improving the payment system by enhancing security, convenience, and efficiency. Digital identity solutions can provide robust authentication mechanisms, such as biometrics, multi-factor authentication, or cryptographic techniques. By incorporating these measures, payment systems can significantly reduce the risk of fraud, identity theft, and unauthorized access to sensitive financial information for payment actors in different countries.

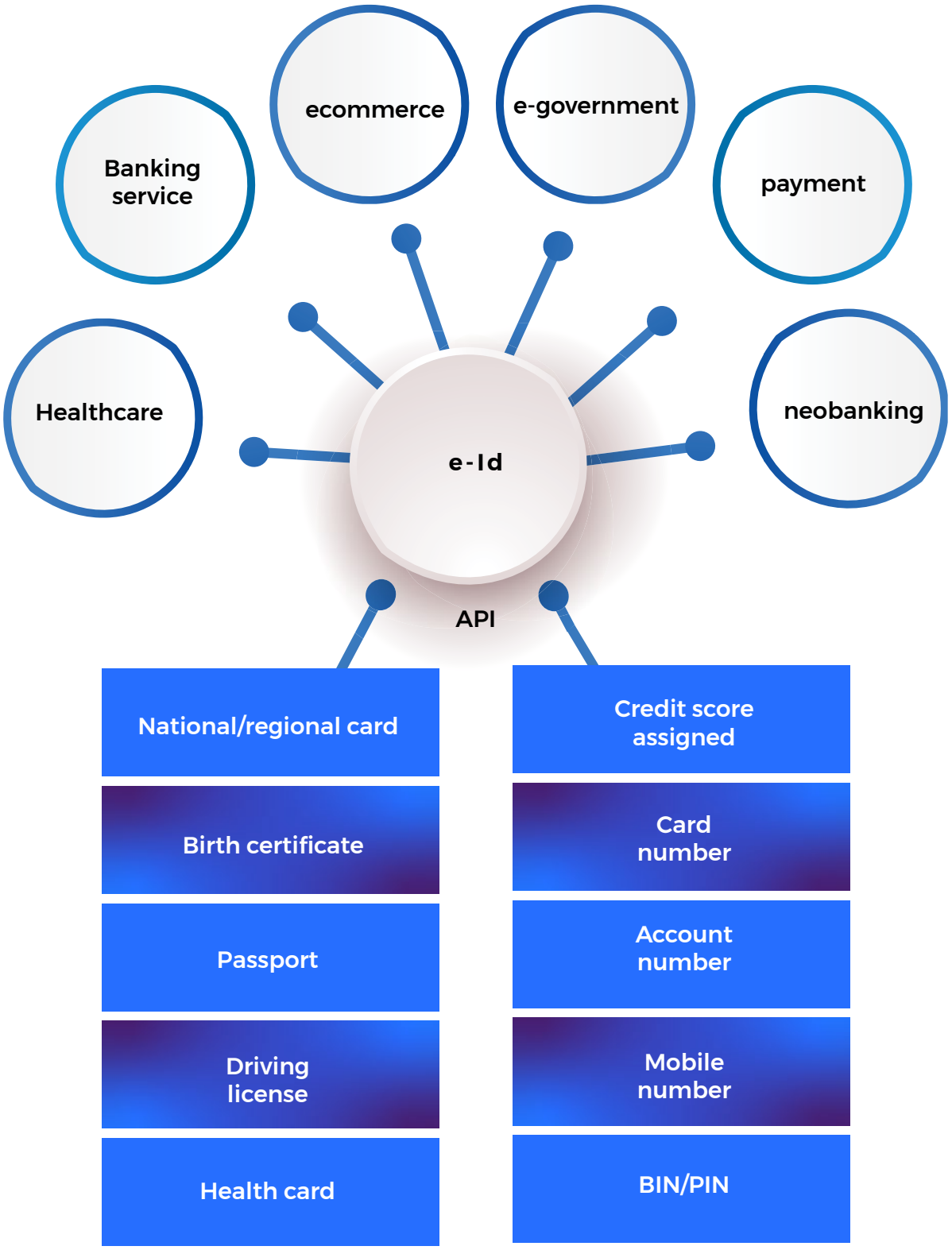
Digital identity verification allows for swift and streamlined onboarding of new users with acceptable digital IDs. Through digital identification processes, financial institutions can verify the identity of customers more efficiently, eliminating the need for cumbersome paperwork and in-person verification. This streamlines the account opening process, making it easier for individuals to access financial services. By securely linking a person's identity to their payment credentials, such as credit cards or digital wallets, individuals can make payments with just a few clicks or taps.

Digital identity solutions can simplify cross-border payments by streamlining the verification process. Digital identities can provide a standardized and interoperable framework for verifying the identity of individuals across different jurisdictions, reducing the complexities associated with international payments and enhancing security.

- Setting common identification attributes at the domestic and international level
- A standard and interoperable framework for verifying the identities of individuals across different jurisdictions.
- Linking all local financial and non-financial IDs
- Integrated digital ID database
- Is robust enough to eliminate duplicate and fake identities and
- Can be verified and authenticated anytime, anywhere easily, and cost-effectively.

It is important to note that while digital identity can bring numerous benefits to the payment system, it also raises concerns regarding privacy, data protection, and the potential for misuse. Implementing robust security measures, ensuring user consent and control over personal data, and adhering to relevant regulations are essential for a successful and responsible deployment of digital identity solutions in payment systems.

Figure 7: Digital ID and infrastructural interaction

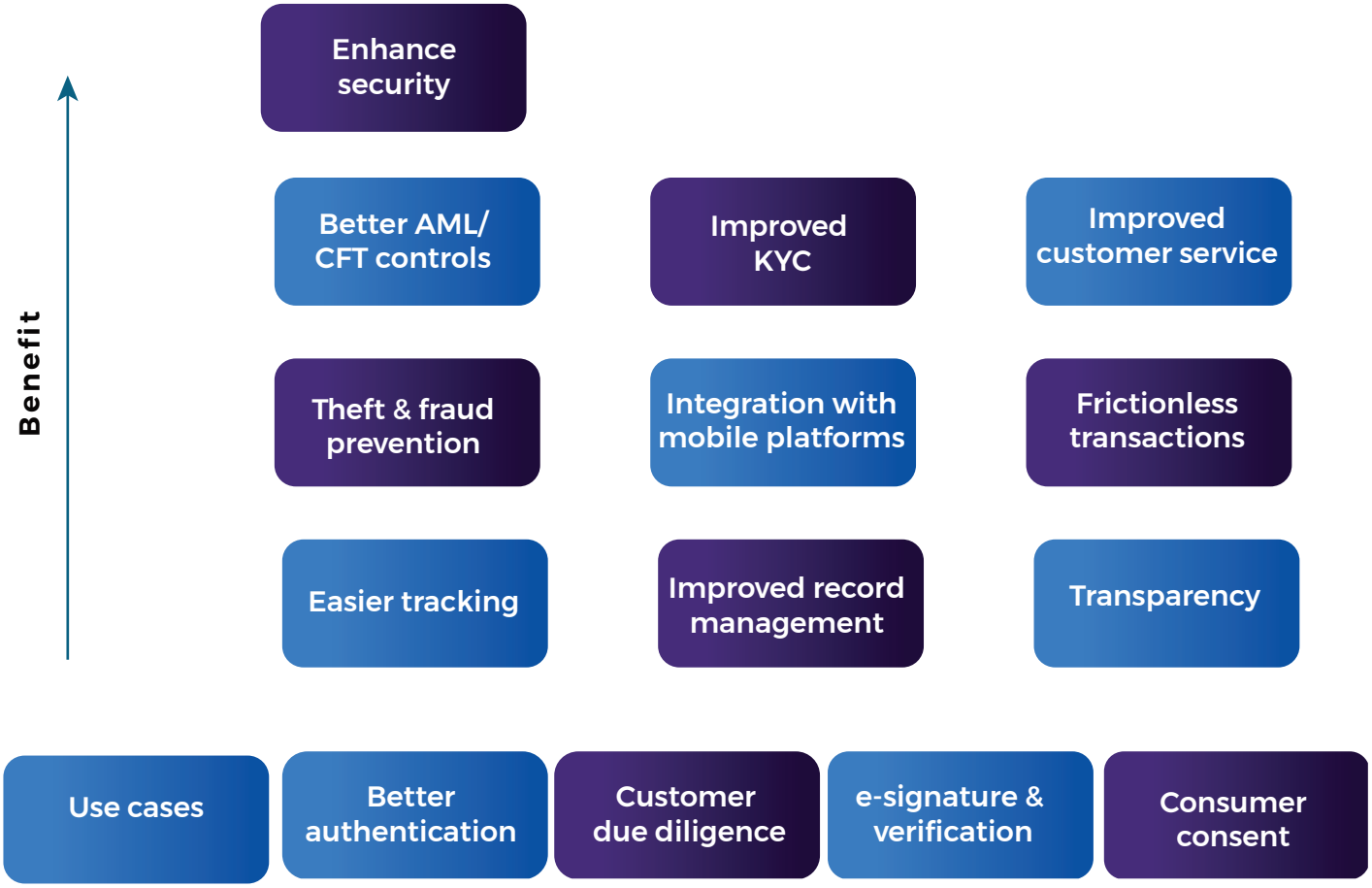


Source: Agpaytech

Benefits and uses of Digital ID

To maximize the benefits of digital ID in cross-border payments, efforts towards interoperability and standardization become essential. Creating a global framework for digital ID systems ensures seamless integration and communication between different countries' payment systems. ID systems that provide digital authentication services can help service providers carry out Customer Due Diligence (CDD) requirements and expand the use of financial services.

Figure 8: Benefits and uses of e-ID



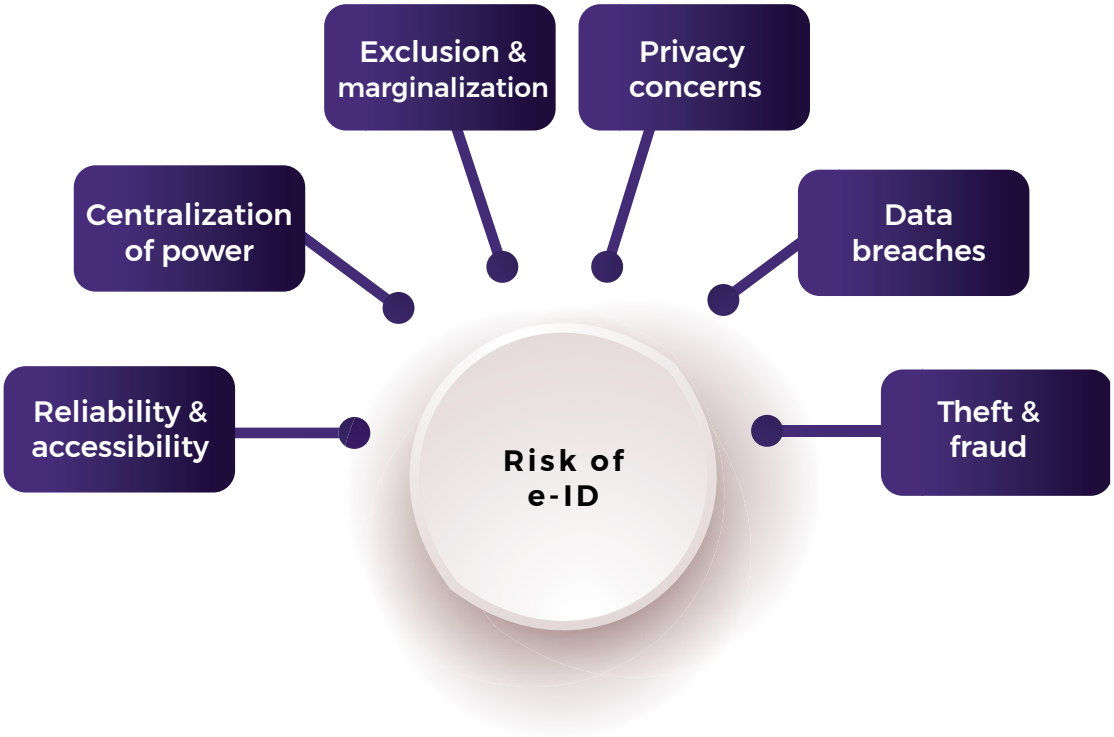
Source: Agpaytech

Risk factors of Digital ID

Digital ID systems, while offering several benefits, also come with certain risk factors and challenges. Some of the key risk-related issues on centralization of e-ID include privacy concerns, data breaches, theft and fraud, exclusion, and marginalization of certain segments of the population who lack formal identification and vulnerable groups. Also, in cases where a single entity or government controls the Digital ID infrastructure, there could be concerns about the concentration of power and the potential for misuse of authority. Another big challenge of the e-ID is related to reliability and accessibility such as technical glitches, system failures, or connectivity issues that could hinder people from accessing

essential services and resources, causing significant inconvenience and potential harm. Implementing digital ID for cross-border payments also raises concerns related to data privacy, security breaches, and potential misuse of personal information. Striking the right balance between security and privacy is crucial to building trust in digital ID systems. However, digital IDs, come with risks that need to be managed and mitigated to build trust and harness the benefits of identification responsibly. Detail on the risks including issues of data - leakage, storage and misuse, untested technologies, and risks from players outside the traditional financial system will be the topic of a separate blog. An important mitigation factor apart from strong laws and regulations is incorporating data protection and privacy in the design of digital ID systems.

Figure 9: Risks associated with e-ID



Source: Agpaytech

Addressing e-ID Challenges with Trust, Regulation, and Governance

Addressing the risk factors of digital ID for cross-border usage, especially in the context of cross-border payment and financial inclusion in Africa, requires a comprehensive approach that considers the unique challenges and opportunities of the region. Digital ID systems can be instrumental in enhancing financial services, enabling secure cross-border payments, and promoting financial inclusion. However, they also bring along certain risks that need to be managed effectively.

Addressing the digital IDs system for multinational use in the African regions is anchored in three pillars; trust and security, regulation framework, governance, and accessibility. As illustrated in Table 2, an effective and strong regulatory framework that incorporates and complies with both domestic and international best practices would promote trust, governance, and security of digital ID. Digital identity solutions can facilitate regulatory compliance by providing verifiable and auditable information about users. Financial institutions can ensure compliance with know-your-customer (KYC) and anti-money laundering (AML) regulations more effectively, thereby reducing the risk of financial crimes. Such digital ID needs public education and awareness and the system design should not marginalize and group of persons or institutions

Table 2: Address e-ID challenges

Trust and security	Regulation framework	Governance and accessibility
Inclusive design and accessibility for broader adoption	A legal framework that governs e-IDs by member countries	Foster interoperability between different ID systems
Cybersecurity measures	**The e-ID system complies with domestic regulations**	**Establish robust identity verification and authentication mechanisms**
Public awareness and education	Complies with international best practices	Partnerships with relevant institutions
Conduct regular risk assessments	**Consent guidelines on privacy and data protection**	**Implement continuous monitoring and evaluation of the digital ID system's performance**

Source: Agpaytech

Regional and Country Action towards Digital ID

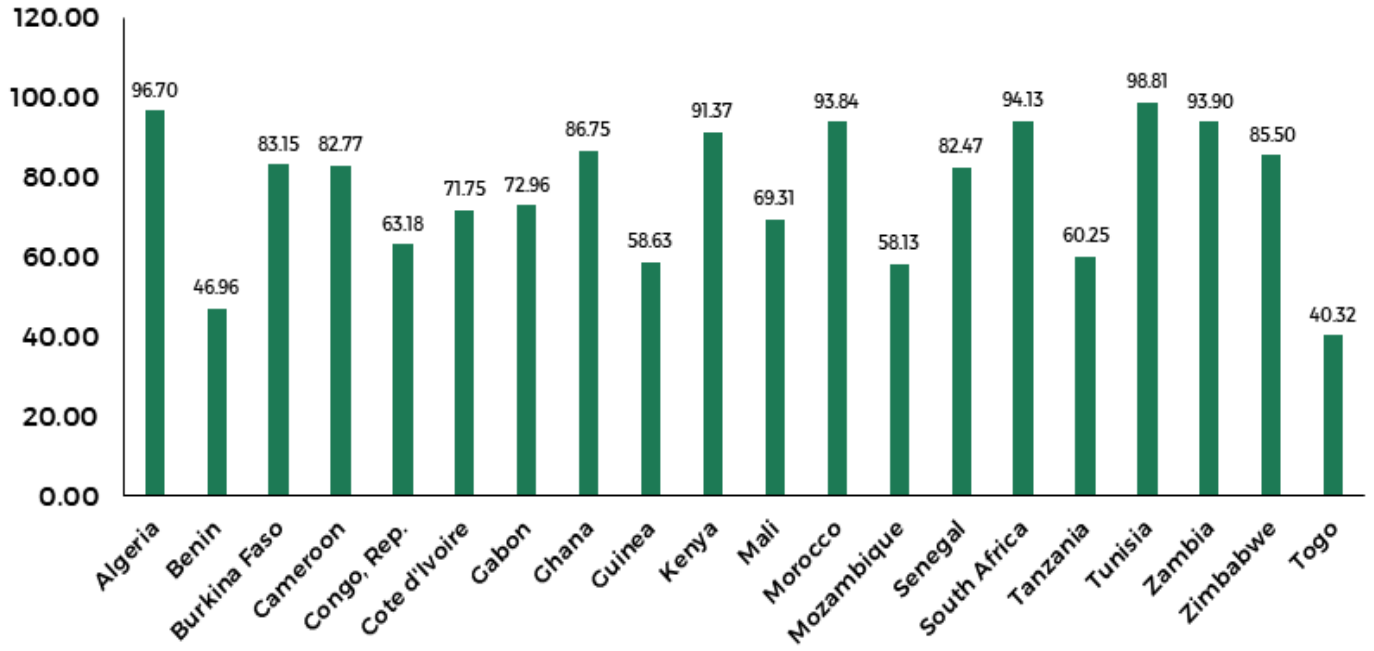
In many countries across Africa, identity systems have largely been paper-based. To bridge this gap, several countries have adopted some form of digital identity (ID) system for civil registration, including birth, national IDs, and voting purposes, incorporating biometrics such as fingerprint, facial, or iris recognition as a form of authentication. Indeed, the systems have gained popularity given their benefits as part of digital transformation journeys to promote accessibility, efficiency, and transparency in service delivery in health, migration, education, social security, and elections. Within the last decade, Lesotho, Mozambique,

Tanzania, Uganda, Zambia, Ghana, South Africa, Zimbabwe, etc., have introduced national biometric digital identity cards.

Technical and financial assistance is demand-driven, guided by the Principles on Identification for Sustainable Development, and tailored to each unique context, meeting every country where they are on their ID journey. The African Digital ID Interoperability Framework that ID4D joined other development partners to contribute to the development of in 2021 was adopted by African Heads of State in February 2022. ID4D continued to provide support to the African Union Commission to advance the initiative, by participating in the African Committee of Experts on Digital ID (ACED) and establishing linkages with World Bank projects, including WURI. Facilitated by the World Bank, a Governance Framework has been validated by all six WURI participating countries and the ECOWAS Commission, and it serves to facilitate coordination and cooperation on cross-border interoperability and mutual recognition objectives.

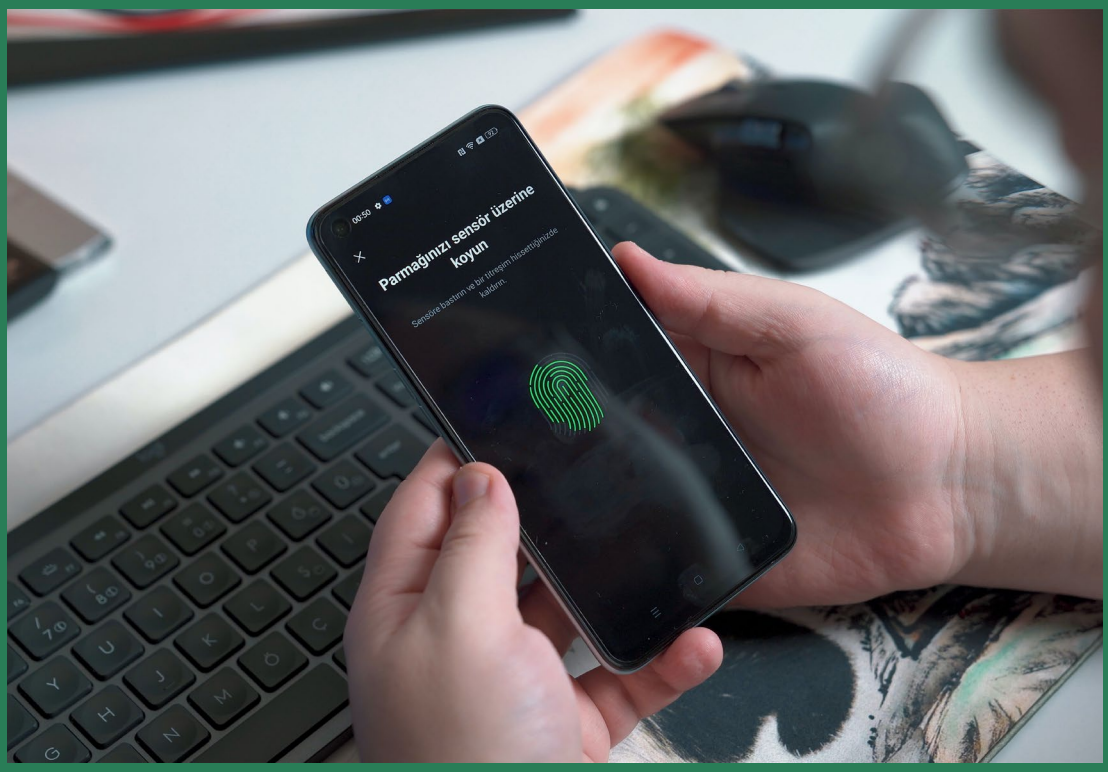
Currently, the percentage of respondents age 15 and above who report owning a primary foundational ID (national ID or similar credential). If the minimum age for obtaining an ID is above 15, observations below the minimum age are excluded (World Bank and ID4D, 2021)

Figure 10: ID ownership in African countries 2021



Source: Identification for Development (ID4D) Data

Conclusion



Digital ID has the potential to further the financial inclusion agenda by making it easier for the unbanked to open a transaction account in conjunction with simplifying documentation requirements, enabling more cost-effective customer onboarding that can be conducted remotely and contributing to the financial sector by supporting the delivery of additional services to the individual such as digital signatures and obtaining customer consent.

e-ID would have a significant impact on the efficiency and individual interactions with government departments, the private sector, banks, non-financial institutions, educational institutions, health facilities, and others. Digital ID would help to facilitate KYC and other mandatory due diligence procedures, in addition to providing information about counterparties and customers central to the risks and opportunities being evaluated, whether business, finance, or related to broader sustainable development objectives.

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About Agpaytech

Agpaytech Ltd. is a company pioneering in the Fintech Space with a focused approach to building robust technologies for eCommerce Card Processing Solutions for Payment Service Providers (PSPs). Additionally, we provide Compliance and Regulatory Umbrella, Remittance-as-a-Service White-Label Solution, Foreign Exchange, Cross Border Payments, and digital currency technology. We have partnered with multiple banks, non-banking financial institutions, and corporate organizations to create a solid service delivery model for them and their customers to ease their international remittances and payments concerns. Website: www.agpaytech.co.uk

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