GVG
GLOBAL VOICE GROUP

Data-Driven Transparency and Compliance in the Digital Financial Ecosystem in Africa

An emerging trend
in emerging economies

July 2023

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Disclaimer

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Abstract

In recent years, there have been significant transformative shifts in financial transactions worldwide.

The adoption of new technologies, combined with the implementation of global, regional, and national policies, and the urgent need for enhanced transparency and security, boosted transactions and their rapid digitization. This is particularly true for Mobile Money transactions, with Sub-Saharan Africa serving as a prime example. According to GSMA's *The State of The Industry Report on Mobile Money for 2018 and 2023*, the value of Mobile Money transactions in that region increased from US$26.8 billion to US$832 billion, representing an astounding 600 percent growth. Notably, a significant portion of this can be attributed to Mobile-enabled remittances. Around US$1 billion worth of international remittances ended up in mobile wallets in 2020, growing by 65 percent annually and showing no signs of slowing down as per McKinsey & Company's 2022 report on *Future of payments in Africa*.

Considering the profound impact of Mobile Money on local economies, the capability to collect and mine such data has become a fundamental necessity for good Governance. Decision-makers are compelled to not only establish adequate regulatory frameworks but also leverage technology to ensure compliance, streamline taxation processes, protect end-users' data, improve Know-Your-Customer (KYC) procedures, and mitigate risks associated with money laundering, financial terrorism and scams.

Many emerging countries are adopting a data-driven approach to address these critical concerns. This paper explores this emerging trend and provides insights into the data acquisition process itself, with a focus in the mobile money and remittance ecosystems.

01

The Critical Need for Actionable Data on Digital Transactions

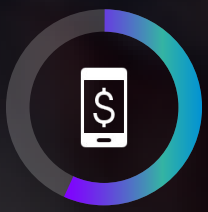
Of all the necessities identified by policymakers and regulators in the exercise of their functions, the need for accurate data is undoubtedly one of the most frequently deplored.

Readily available data can substantially improve the state of integrity and transparency in the digital financial ecosystem in emerging and developing countries. This is certainly a priority for government agencies and regulatory bodies, considering the massive amount of data generated through the networks of financial gateways, applications, services, and interfaces.

In emerging and developing countries, the market for digital financial services is expanding significantly, with a growth rate that is challenging to quantify precisely. This tendency is particularly noticeable in Mobile Money (MM), a crucial instrument for promoting financial inclusion in many African countries. Data from the Central Bank of Kenya showed that **the amount of money transacted on mobile phones reached 56.8 percent of the country's GDP by end of 2021. The same year, the value of MM transactions accounted for 70 percent of the GDP in low-income countries in sub-Saharan Africa**, according to the International Monetary Fund (IMF). The upward trend in MM usage, already strong before the COVID-19 pandemic, has increased in its wake. Reports from the GSMA show that **the global number of MM users has grown ten-fold from 134 million in 2012 to 1.35 billion in the second year of the pandemic (2022)**. Sub-Saharan Africa alone now accounts for 70 percent of the global MM market.

Mobile Money (MM) 2021

The amount of money transacted on mobile phones reached

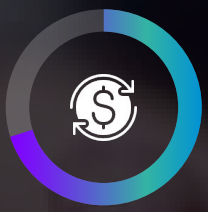


56.8%

of the country's GDP by end of 2021.*

*Data from the Central Bank of Kenya.

The value of MM transactions accounted for



70%

of the GDP in low-income countries in sub-Saharan Africa.*

*According to the International Monetary Fund (IMF).

Global number of MM users

Reports from the GSMA show that the global number of MM users has grown ten-fold between 2012 and 2022.

2012 **134 M**

2022 **1.35 B**

Remittances accounted for at least

10%

of the GDP of emerging and developing countries in 2020.*

* According to the World Bank.

International remittances sent to low and middle-income countries in 2022 reached*

US$ 626B

* Estimated by a KNOMAD report.

What about remittances?

The remittance market is also particularly important for emerging and developing countries.

According to the World Bank, **remittances accounted for at least 10 percent of their GDP in 2020.** A KNOMAD report estimates that **international remittances sent to low and middle-income countries reached US$626 billion in 2022.** Like MM, they play a crucial role in their economy, **even surpassing Official Development Aid (ODA) in many cases.**

Their positive impact on financial inclusion is extensively acknowledged. While international remittances are still sent primarily through money transfer agencies, though MM-enabled international remittances are steadily growing, domestic ones are dominantly channelled through MM platforms. **The lower fees of MM compared to other methods** (about 3.7 percent vs. over 6 percent on average for cross-border remittances, according to GSMA and KNOMAD, respectively) **make it more aligned with the UN Sustainable Development Goals, which aim for a target of 3 percent by 2030.** This is another critical area where policymakers have already started making crucial decisions in terms of national regulation and international regulatory harmonization, e.g., to enable more affordable cross-border remittances via MM.

Overall, remittances and MM offer cost-effective and highly accessible avenues for driving financial inclusion than traditional banking in emerging and developing countries.

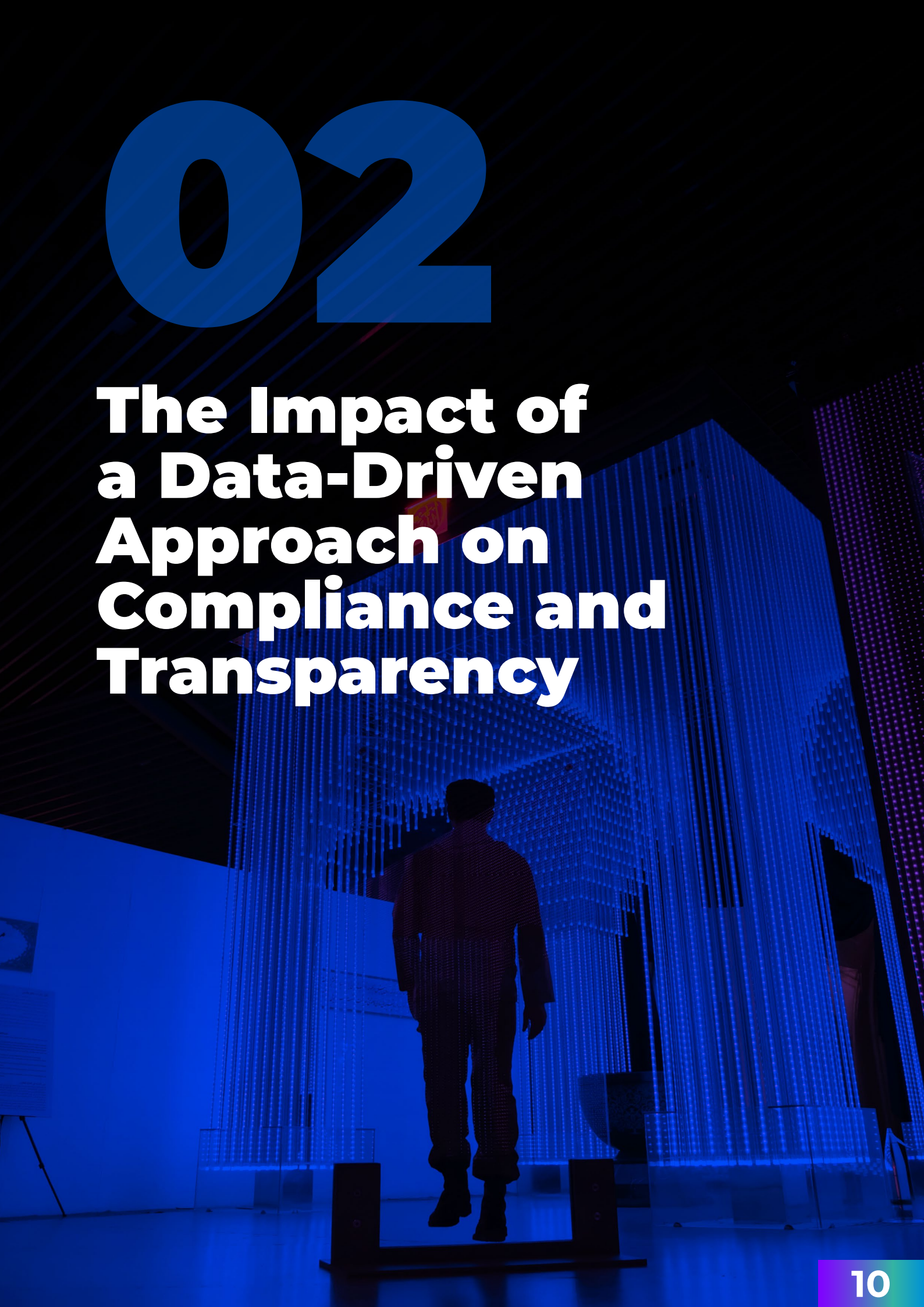
Today, a wide variety of digital financial services could positively impact financial inclusion. The next evolution in the sector revolves around improved accessibility, integration, and interoperability within an ecosystem through harmonized and more effective national and regional regulations. Addressing such a complex challenge requires collaboration between governments, regulatory authorities, and industry stakeholders. **It also requires a data-driven approach beyond periodic reports and statements from the industry.**

In most cases, the statistics presented here are based on such reports and statements rather than data independently collected at the source by central banks and other relevant authorities. As a result, there often needs to be a mechanism to verify and validate their accuracy. **Moreover, they neither provide real-time nor detailed views of the digital financial ecosystem.** Such reports and statements are still out of step with current reality, delivering a view that is months old at best. Therefore, they have only limited value for policymakers and scarce value when it comes to monitoring the impact of their policies in a timely fashion. Nor do they have any real value for central banks and regulators who must continually verify the regulatory compliance of the digital financial ecosystem within their respective jurisdictions.

Indeed, an effective data-driven approach requires much more than traditional reporting from the industry. It requires direct and comprehensive data collection by policymakers and regulators. In other words, **it implies a direct connectivity between them and the digital financial ecosystem for real- to near real-time data collection.**

02

The Impact of a Data-Driven Approach on Compliance and Transparency



Data technologies have already had a significant impact on transparency and compliance in various sectors. RegTech today (or Regulatory Technology) essentially consists of data systems that analyze and monitor regulatory compliance. Historically, they were first implemented downstream by the regulated industries, including the financial sector. Combining data and analytics, they track and report on the industry's compliance efforts, reducing the risk of regulatory penalties and reputational damage. In this context, **data is used to create detailed reports and dashboards that provide stakeholders with greater visibility into a specific company's performance, goals, and activities.** It results in increased transparency that helps build trust with investors, customers, and other stakeholders.

Upstream, similar data technologies are increasingly used by governments and state agencies to acquire **the same visibility over an entire sector**, turning RegTech into what we call SupTech today (or Supervisory Technology). Through data links, they radically change the reporting process between the regulator and the regulated industry, making this reporting continuous, integral, and constantly updated.

This approach does not simply promote transparency, it enforces it across an entire sector. It also creates a strong incentive to comply, as non-compliance issues become transparent as well.

Compliance and transparency are crucial in all sectors. Still, their importance in the digital financial ecosystem cannot be overstated, as this ecosystem requires high trust and integrity to remain viable. Building such trust and integrity is also essential to further **promote digital transaction services among unbanked populations,** thus achieving greater financial inclusion in developing and emerging countries.

These countries face a lot of pressure to ensure the transparency and integrity of digital financial services within their respective jurisdictions. For instance, they are increasingly required to comply with international anti-money laundering and countering the financing of terrorism (AML/CFT) standards. Such standards can be detrimental to financial inclusion, as the institutions involved in the digital financial ecosystem may tighten their own requirements as part of their de-risking strategy, which can lead to the exclusion of individuals and entire groups. **Policymakers have a difficult balancing act to accomplish between protecting the integrity of the MM and remittance services and promoting financial inclusion.**

A data-driven approach could further reconcile AML and financial inclusion, by making the former more effective and by measuring its impact on the latter.

03

Four Key Fields of Application

Governments and state agencies may use the astronomical quantity of data generated by the digital financial ecosystem in many ways.

Using big data technologies combined with artificial intelligence (AI), they can mine it for demographics analysis, resource planning, predictive studies, etc. In terms of financial governance and regulation, four fields of application immediately stand out:

1 **Regulatory compliance**

2 **Policy-making**

3 **Financial intelligence**

4 **Financial inclusion**

We present financial inclusion as a specific field of application to highlight its importance. In fact, it is more of a cross-cutting concept to consider when addressing the other three.

As previously stated, the level of regulatory compliance goes hand in hand with the level of transparency, the latter largely depending on the data systems in place. **Such systems make it possible to automate and optimize the verification of compliance with the regulations in force in each country**, such as thresholds and limits relating to the number of transactions per day, the amount of each transaction, applicable fees, etc.

Overall, data technologies also have the potential to revolutionize policymaking by enabling evidence-based decision-making. They make it possible for policymakers to quickly collect and efficiently analyze large amounts of data to obtain actionable statistics. This can help them to better understand the challenges facing the digital financial ecosystem and make informed decisions based on the evidence. Policymakers may also use these technologies to develop predictive models that can help them to anticipate future trends and thereby enact data-driven decisions to mitigate the anticipated potential issues.

Finally, these technologies can help Financial Intelligence Units (FIUs) to better detect, prevent, and investigate financial crimes such as money laundering and terrorist financing, ultimately leading to a safer and more secure digital financial ecosystem.

DIGITAL TRANSACTION DATA

- MOBILE MONEY
- REMITTANCES
- OTHERS

Regulatory compliance

- Amount limit
- Maximum number of transactions
- Applicable fees
- Other regulatory requirement

Financial inclusion

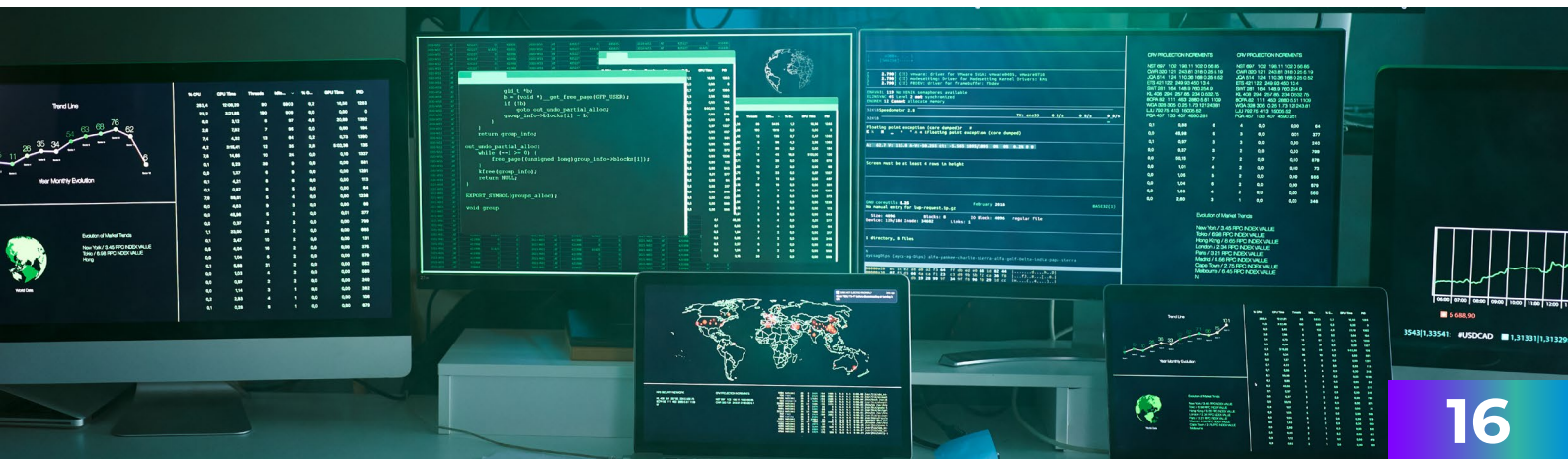
- Credit scoring of the unbanked
- Micro-finance projects
- Other financial inclusion programs

Policy-making

- Transactions stats
- KPIs and trends
- Policy impact

Financial intelligence

- Anty-money laundering (AML)
- Know-your-customer (KYC)
- Combat-the-financing-of-terrorism (CFT)

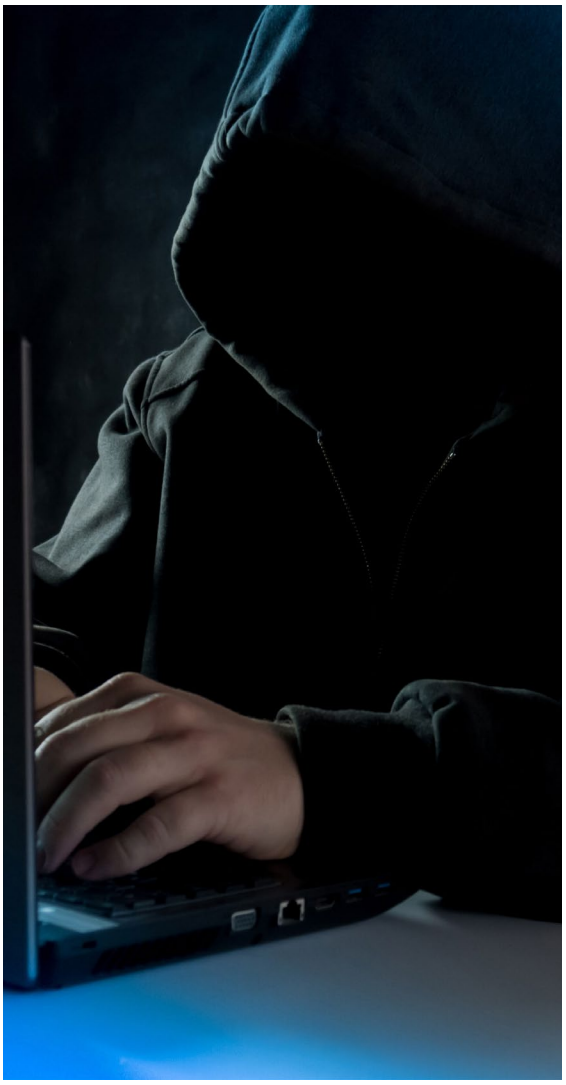


04

About the Data Acquisition Process

Although there is general agreement that governments and state agencies need data, there is no clear consensus on what data they should be able to access and how.

In the case of transactional data, the very idea of a **direct data connection with different transaction platforms can create resistance, both from the industry and the users themselves** on the grounds that it could potentially violate privacy rights. This resistance has prompted the governments of some emerging countries to abandon their plans for transaction data platforms under combined pressure from the industry and the public.



African governments have nevertheless endorsed this type of project – including in Ghana, Tanzania, and Uganda, three of the biggest MM markets in Africa – and some others are planning to follow suit. **Most of these MM data platforms have been implemented by our group, the Global Voice Group (GVG), a pioneer in this field of application of data technologies.** We have also developed similar platforms for remittance metrics and analytics that have not yet been implemented. However, our MM platform already captures data on remittances sent via MM services.

This platform provides a comprehensive, real-time, and objective view of all MM inflows and outflows, along with detailed transaction data and Key Performance Indicators (KPIs). In addition, the solution's AML rule-based engine automatically detects irregularities and suspicious activities, including those potentially linked to money laundering.

From a technical standpoint, the solution consists of a system distributed among the MM providers for centralized monitoring by the relevant authorities. This system captures and processes the data pertaining to all types of transactions, including cash-in, cash-out, payments, money transfers, etc. It requires the installation of data acquisition equipment at the premises of each MM provider. **This is carried out in a non-intrusive way to avoid interfering with the providers' regular operations.**

Currently, our system monitors about

25%

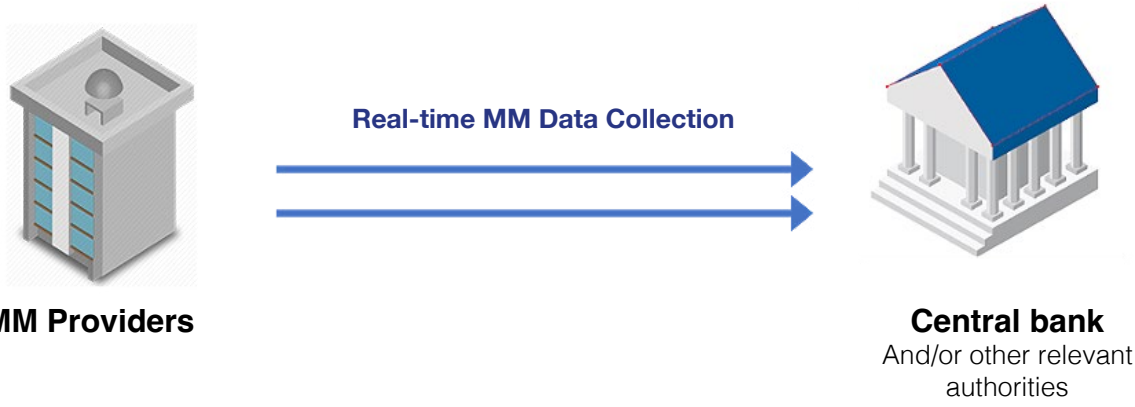
of all money inflows and outflows passing through MM platforms in East Africa, the largest MM market in the world.

It verifies and analyzes over

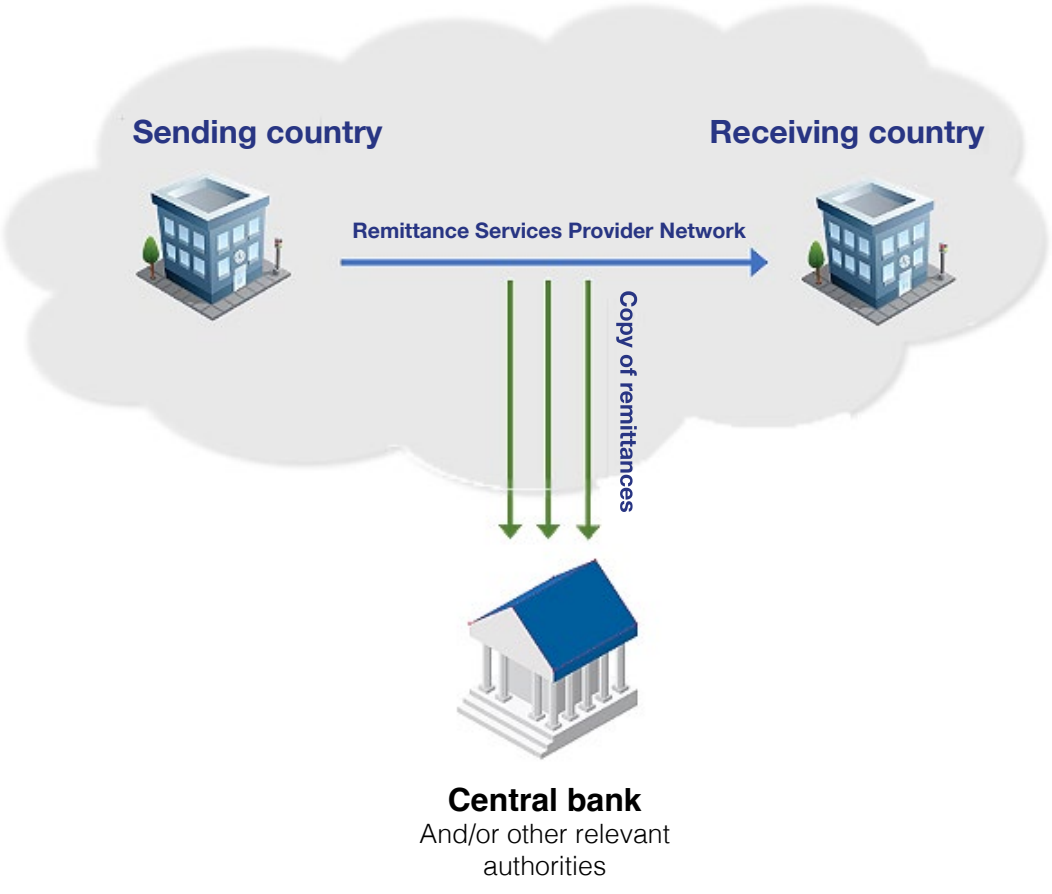
US$ 90B

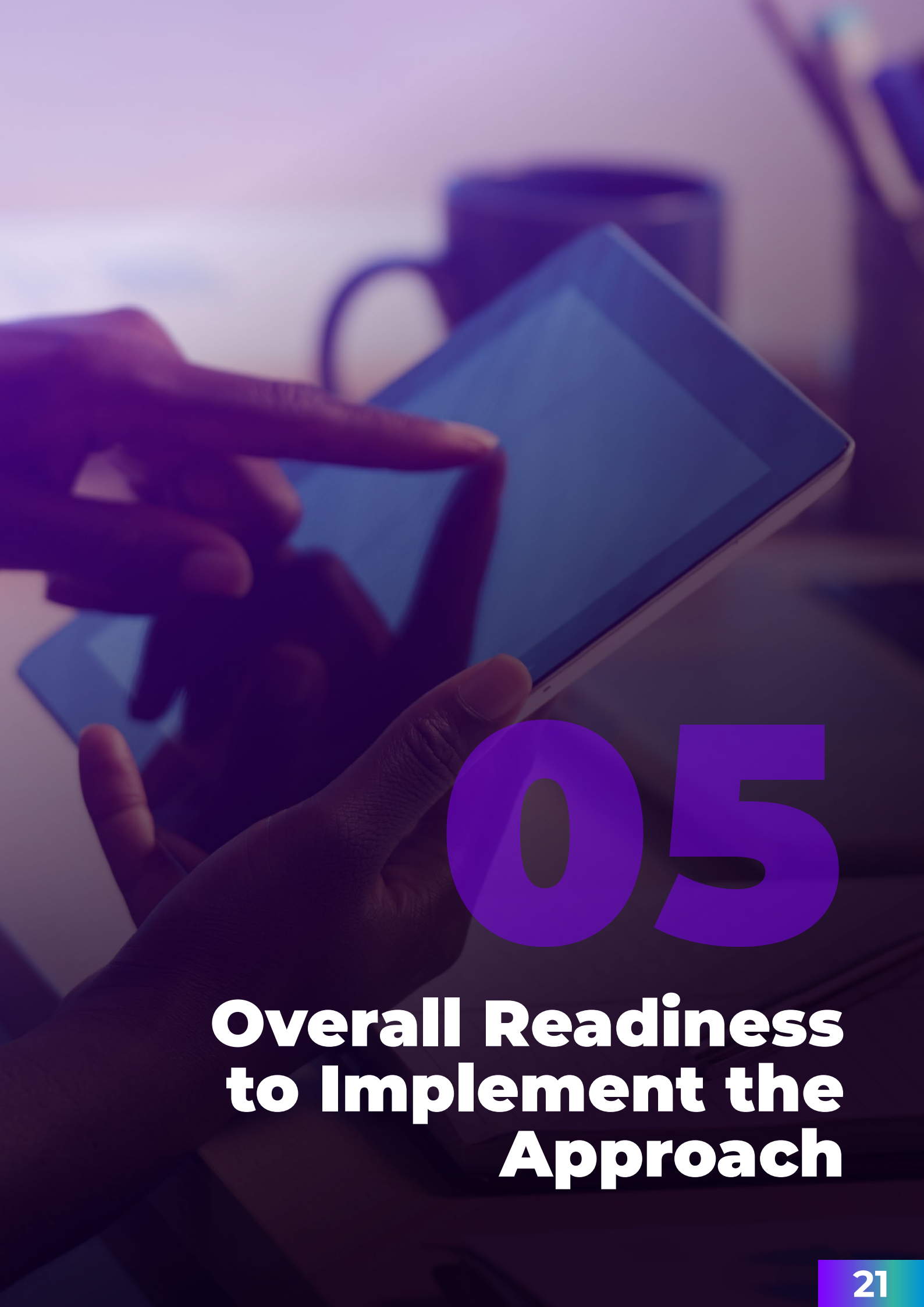
worth of digital transactions each year.

Mobile Money Data Acquisition



Remittances Data Acquisition





05

Overall Readiness to Implement the Approach

The ability of governments and authorities to reap the benefits of a data-driven approach depends upon their technological readiness.

In 2022 there were only

82

data centers

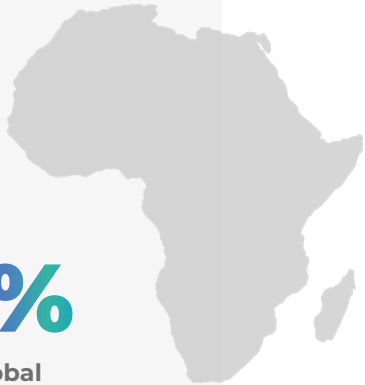
in Africa.*

* Reported by The African.

Today, Africa represents only

1%

of the global data center market,*



17%

of the global population.*

* According to the CFO of Africa Data Centers, Finhai Munzara.

While the use of these technologies in developing countries has been increasing in recent years, **there were only 82 data centers in Africa in 2022** compared to thousands in Europe and the United States. **Today, Africa represents only 1 percent of the global data center market, while the continent houses 17 percent of the global population.** Overall, this market is still at an early stage of development in Africa, with less reliable infrastructure (including power, Internet connectivity, and fiber backbones) and diluted resources to build and maintain these facilities.

As digital data is becoming one of the world's biggest sources of economic growth, most of the data produced by Africa is still hosted outside the continent.

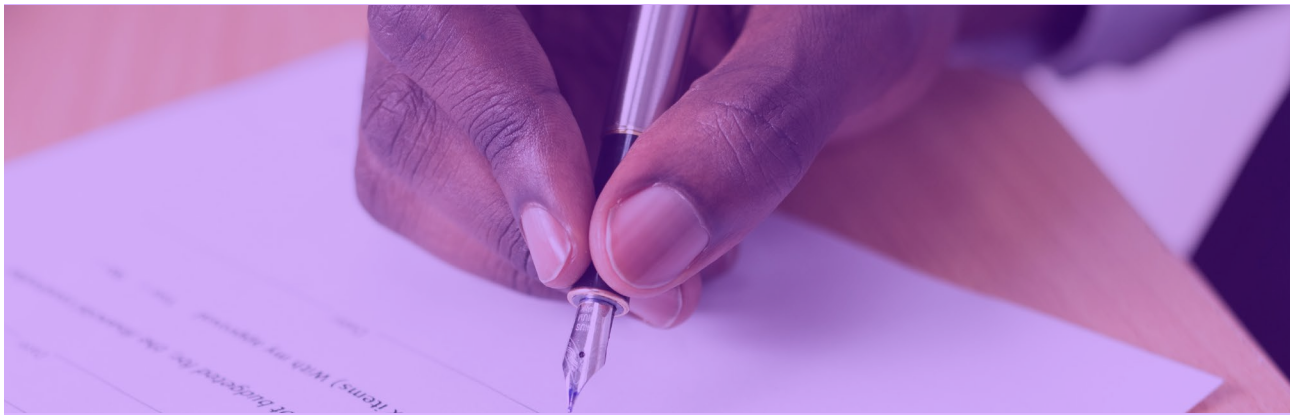
36/54
African countries

have put in place some data protection laws or regulations.*

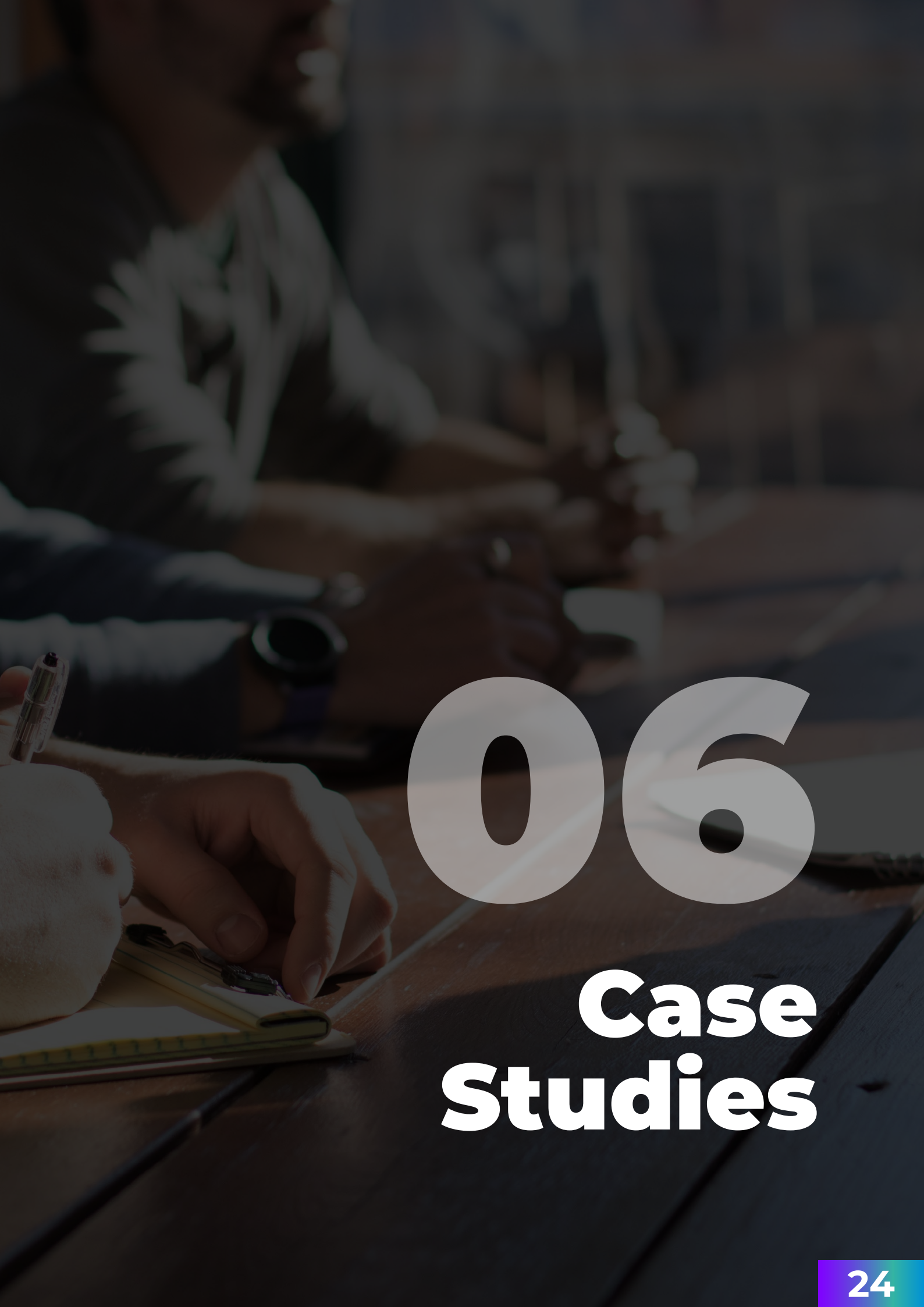
* According to *Recent Developments in African Data Protection Laws*, from Hogan Lovells.

This raises issues of data sovereignty and ownership, which are a growing concern for emerging and developing countries.

To promote the emergence of an African data ecosystem, realize its full potential, and open the door for development and innovation, a strong and comprehensive regulatory framework must be established. Data policies and laws vary widely depending on the country and its level of economic development. But many developing countries are still in the process of establishing legal frameworks to govern the collection, storage, processing, and sharing of data. **As of today, 36 out of 54 African countries have put in place some data protection laws or regulations,** according to *Recent Developments in African Data Protection Laws*, from Hogan Lovells.



However, things evolve more rapidly in terms of regulation. In many African countries, the regulatory framework is even outpacing infrastructure development to a large extent, as **the current data protection and sovereignty requirements would require increasing the current numbers of data centers from 82 to at least 700 across the continent.**



06

Case Studies

The following case studies describe how data technologies have been used to address different issues relating to digital financial transactions in different countries.

In each case, the Mobile Money Data Platform was developed by GVG.

CONGO

2.8 M

active MM users in 2022.*

50.6%

penetration rate.*

*According to the Congolese post and electronic communications regulator, ARPCE.

Congo-Brazzaville is a relatively small but fast-growing MM market with about **2.8 million active users in 2022 and a penetration rate of 50.6 percent,** according to the Congolese post and electronic communications regulator, ARPCE. Congolese policymakers actively promote MM.

Since 2019, Congo MM users can use it for utility bills and other payments to the government. Certain utility and some payments to government have been made mandatory through MM only. Until the implementation of GVG's MM solution in the country, the regulator had limited visibility over these services and no independent means to monitor their growth and compliance.

In 2019, the ARPCE commissioned GVG to implement its MM Data Platform to improve MM oversight and related decision-making.

Based on the data collected by the platform, policymakers have been able to take decisions and implement measures that helped build trust in MM services and increase their usage.

> Before GVG implemented the M3 in 2019, the ARPCE could only rely on partial reports and information from the Mobile Money industry to regulate and oversee this fast-growing sector. The M3 has been a real game-changer for us, as it replaced this fragmented information and substantially improved our compliance monitoring and AML capabilities, through a continuous flow of data directly collected at the source. As a result, we can confirm M3 has enhanced our market oversight and has brought more transparency to our financial ecosystem.
>
> **Marc Sakala**, Director General of ARPCE in Congo-Brazzaville, 2023

36%

increase in revenue from 2021 to 2022.

18%

increase in taxes paid by the telecom industry in 2021 compared to 2020.

Ghana is another country where the MM market has experienced fast growth. From 2018 to 2021, **the percentage of Ghanaians over the age of 15 with a mobile money account jumped from 13 percent to 39 percent.**

While Mobile Money regulation is primarily the responsibility of the Bank of Ghana, the MM data platform is currently mainly used for statistical purposes and for the collection of taxes and levies. The National Communications Authority (NCA) relies on it mainly for MM metrics and market intelligence, while the Ghana Revenue Authority (GRA) uses it for revenue assurance and tax computation purposes.

In October 2021, the government introduced an e-levy (a tax applied on transactions made on electronic or digital platforms) on certain types of MM transactions, among others, in an effort to widen the tax base. GRA used the platform data to conduct a thorough assessment of MM sector turnover and of the businesses using MM.

As part of a broader Common Platform that integrates other systems, the MM data system greatly contributed to GRA's tax oversight capabilities.

This improvement translated into a **36 percent increase in revenue** from 2021 to 2022 **and an 18 percent increase in taxes** paid by the telecom industry in 2021 compared to 2020.

> Since the implementation of the Revenue Assurance Platform in 2018, the GRA has gained great visibility into the revenue streams generated in the telecom market, helping to improve revenue assurance and policy-making capacity. The platform represents an incentive for transparency and tax compliance in the telecom sector.
>
> **Rev. Dr. Ammishaddai Owusu-Amoah,** Commissioner-General Ghana Revenue Authority, 2022

RWANDA

16.6 M

MM registered accounts in Q4 2022.*

A rise of

8.3%

from Q4 2021.*

* National Bank of Rwanda.

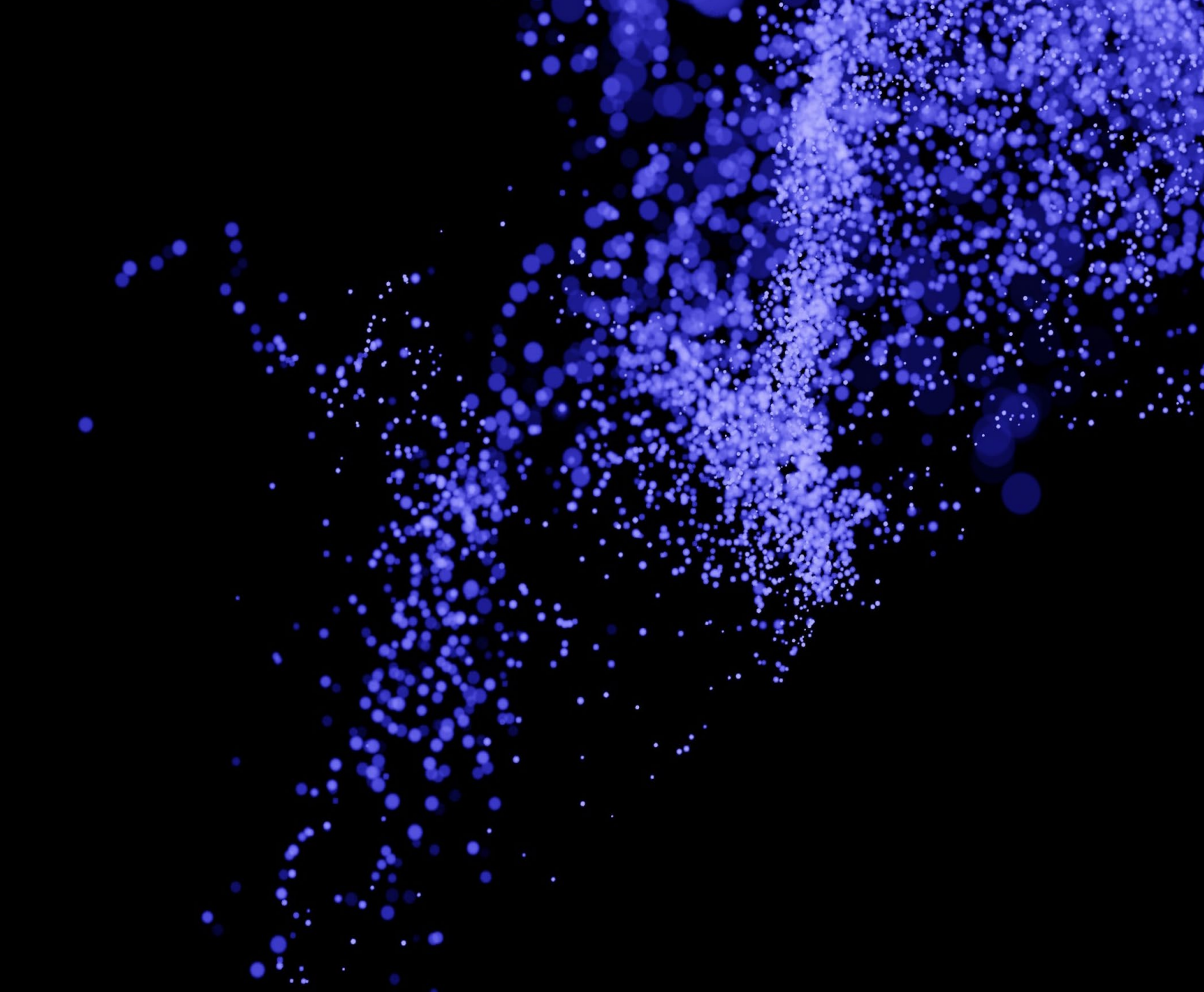
The number of MM registered accounts in **Rwanda** reached **16.6 million in Q4 2022, a rise of approximately 8.3 percent from Q4 2021.** It represents more than ten times the number of accounts registered in 2012 when mobile money was still in its infancy in the country.

In 2016, the MM data platform was commissioned by the Rwandan regulator, Rwanda Utilities Regulatory Authority (RURA), to support regulatory oversight of this fast-growing market. The same system is also used by the National Bank, BNR, to support its AML monitoring processes.

Additionally, RURA relies on the data platform to generate useful statistics for the government. For example, when the government was looking for a way to encourage increased use of MM during the pandemic, data from the platform enabled policymakers to determine the appropriate measures to achieve this goal, including an increase in amount allowed per transaction.

RURA itself uses the system to monitor mobile money services continuously. Among other critical purposes, it allows them to detect irregularities in fees charged by service providers, e.g., in the case of cash-in transactions for which no fees should apply in Rwanda. Based on data from the system, they were able to identify a provider who was charging those fees on certain cash-in transactions. Further investigation revealed that those transactions were made between a bank account and a mobile wallet and could, therefore, be considered as a chargeable service. **This example demonstrates the level of efficiency and vigilance that the system enables in terms of tariff compliance monitoring.**

> GVG's platform that we (RURA) use for traffic verification as well as to be able to see what's happening with mobile money, has helped us because we now have informed policies and regulation and are able to guide this industry in the right direction.
>
> **Patrick Nyirishema**, former Director General RURA, 2019



Conclusion

Data technologies have a crucial role to play in the good governance of the digital transaction ecosystem.

In addition to their direct benefits in terms of regulatory oversight and revenue mobilization for governments and regulators, their implementation can also help build trust in digital financial services and, therefore, improve financial inclusion through increased use of these services by the unbanked population. Faced with an increasingly digitized environment, a growing number of policymakers and regulators are adopting these technologies.

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