GHANA
case study

Good data exchange can confer an array of benefits, from improving the operational efficiency of governments and driving economic growth, to enabling access to essential services for people and building trust.

The factors that make up good data exchange are relatively well established and include effective laws and regulations, technology architecture, and accountability and oversight mechanisms. Far less research has been conducted on how these factors function in the real world as governments navigate their unique contexts to build, implement, and ensure buy-in and usage of their data exchange efforts.

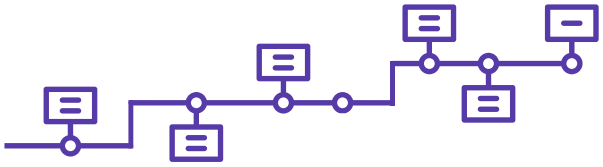
We know that there is no one-size-fits-all approach to national data exchange systems. Each country's progression and timeline are unique, and the process is seldom linear. Their trajectory is greatly influenced by the motivating drivers for establishing national data exchange systems and the methods by which they go about doing so.

The Digital Impact Alliance conducted research into these unique drivers and considerations to inform a greater understanding of how national data exchange systems are being developed, and the ensuing implications for governments, the private sector, and people.[1]

This case study surfaces:

- Essential insights and learnings for policymakers and government technology leaders as they undertake their own journeys to implement integrated national data exchange systems.
- Practical recommendations for funders and policymakers as they consider where and how to make strategic investments to support countries with their national data exchange efforts, and beyond.

PROGRESSION AND TIMELINE



Like many African countries, Ghana liberalized its telecommunications industry in the 1990s. In turn, this catalyzed strong market competition that led to near universal mobile coverage and a mobile internet penetration rate of around 70%. By 2017, the World Bank's "Digital Economy diagnostic"[2] estimated Ghana's information and telecommunications industry was contributing around $1.7 billion, or 3.6% of the overall GDP, to Ghana's economy – a figure that is projected to grow to over $5 billion by 2030.

Today, the digital ecosystem in Ghana is characterized by strong internal connectivity and private sector investment, and increasingly more affordable telecommunications prices. Ghana also hosts significant internet infrastructure, including submarine cables linking Africa to Europe, and is seen as a regional hub for digital technology and an engine of telecommunications growth in West Africa. Overall, these factors combined have fueled a vibrant local digital technology sector and innovation economy in Ghana.

Over the last two decades, Ghana's evolving technology backbone – led by the private sector – has influenced the government's data exchange efforts in several important ways:

- National efforts to respond to a quickly changing private sector have created a decentralized approach to data, as well as fragmentation of roles and responsibilities across government ministries, departments, and agencies.
- A history of open data protocols since the 2010s has helped to expand data access and increase transparency.
- The country's vibrant Fintech sector has significantly influenced the public sector regulatory and financial environment, creating important use cases for innovative data sharing platforms.

However, in recent years, the government's efforts to better integrate and share data across ministries, departments, and agencies have shown mixed results. Its first data exchange hub eGIF, stalled due to lack of funding and clear priorities. In the meantime, Ghana.gov – the government payments portal that was enabled by the Fintech sector – has proved a catalyst for streamlining services and data exchange.

KEY MILESTONES

National Data Exchange Hub

In 2009, Ghana launched the eGIF project, a multi process e-government interoperability framework to create a national data exchange hub. The project aimed to integrate data systems and datasets across ministries, departments and agencies by setting up rules and definition of applications, data, and infrastructure requirements for interoperability. A roadmap was created to ensure a clear pathway to success for eGIF. In particular, the roadmap outlined future legislation and relevant laws required to compel ministries, departments, and agencies to utilize eGIF. However, implementation of the detailed legislation and laws has been a very slow process, with a one-at-a-time approach ultimately taken.

At the start of the project, eGIF implementation Guidelines were drafted, which warned of challenges[3] to its success, such as:

- Cost of implementing new systems
- Impact of doing away with legacy, old-school systems
- Disruptions to government services
- Resistance to change
- Fear of job losses

Ultimately, efforts to put in place a national data exchange hub appear to have stalled due to financial resource constraints and unclear implementation mandates. While In 2019, and again in 2022, the Ministry of Communications and Digitalization issued a call for bids for "Design, Supply, Implementation and Training for National Data Exchange Hub", the status of the project remains unclear.

Ghana.gov

In the absence of progress on Ghana's national data exchange hub, the digital ecosystem looked to the vibrant digital financial services sector as a key use case for driving national data exchange practices.

In 2017, an Auditor-General's report cited inefficiencies in revenue collection, resulting in losses of over GHS 2 billion (US $165 million) annually. At the time, 254 government ministries and agencies, along with around 127 public organizations, were operating more than 2,000 physical points of services with mostly manual processes.

Ghana.gov was designed and implemented in response to these challenges, providing a revenue collection platform and a single point of access to government services for the public sector. The platform was initially piloted in 2013 with only 11 agencies onboard. At the time, usage was low and some agencies with lucrative services, such as the Driver and Vehicle Licensing Agency, refused to join the platform. This was largely due to a lack of trust among agencies to share data as well as share revenue percentages to Ghana.gov. In 2017, the platform was redesigned with e-services and e-payments merged. Subsequently, all agencies were ordered to use it by the government.

Open Data

Another key – and continuing – milestone is Ghana's longstanding commitment to open data. Under the leadership of the National Information Technology Agency (NITA) and the Ministry of Communications and Digitalization (MoCD), Ghana's Open Data Initiative (GODI) has been among the most vibrant on the continent.

Since 2010, the GODI Secretariat has been housed within NITA, serving to coordinate the initiative and respond to inquiries from data users. The first of its kind in West Africa, the Secretariat was designed to promote transparency and accountability within the country's open data efforts. Currently, GODI has 315 data catalogs from 22 government ministries and agencies.

GODI has played an important role in promoting better governance and delivery of public services through increased accountability and transparency of public officials and their work. The open data policies of GODI, and how they have been institutionalized, have been cited as key indicators of Ghana's progressive culture of data sharing and transparency.

In a show of Ghana's commitment to open data, in 2011, the country joined the Open Government Partnership (OGP)[4]– a global partnership between government leaders and civil society advocates to promote transparent, participatory, inclusive and accountable governance. The government subsequently adopted a National Open Data Action Plan,[5] which outlined a commitment to open its data and information to the public and to pass relevant enabling legislation. This was taken forward by the newly created Ghana Open Government Partnership Steering Committee.

Since 2011, Ghana has been one of the most active members of the Open Government Partnership and has refreshed its National Open Data Action Plan three times – the most recent of which recast the plan as the National Data Sharing

Policy. The policy not only stipulates protocols for data sharing, data licensing, and formats and standards, but also addresses mechanisms for interagency coordination and collaboration on data sharing and data governance. Open Government Partnership membership and action planning has since been adopted by Ghana's subnational administrations, including at the municipal assembly level.

E-payments landscape

Ghana's thriving Fintech ecosystem is largely acknowledged as a key catalyst for data exchange. While cash is still king in the country, important strides have been made to enable a robust digital payments landscape.

Since mobile money was introduced in 2009, digital payment channels have expanded to include mobile apps, internet banking, digital wallets, e-checks, Unstructured Supplementary Service Data (USSD), and electronic funds transfers. MasterCard and Visa have also put in place debit/credit cards that deduct funds directly from bank accounts. These channels have been used for an array of payment needs, including payment-to-government, government payments, business-to-business, merchant and retail payments, public utility payments, and person-to-person payments.

In 2007, largely due to Fintech's strides in facilitating digital payment adoption, the Ghana Interbank Payment and Settlement Systems Limited (GhIPSS) was created. Led by the Central Bank of Ghana, the program was set up to ensure standards, and implement and manage an interoperable payment system for banks and non-bank financial institutions. This formed the foundational infrastructure for financial data exchange. GhIPSS infrastructure is currently used by all banks in Ghana, as well as savings and loans companies, mobile money operators, and third-party payment providers. The Fintech ecosystem builds their products on top of this settlement infrastructure, which facilitates cross-financial institution payments.

According to the Central Bank of Ghana, the country's payment systems have significantly improved over the years and continue to evolve to meet the needs of the country. Today, development of Ghana's payment systems is being driven by economic, financial, and public policy factors, as well as a growing local technology startup ecosystem and global trends in payment systems development.

IMPLEMENTATION OF GOOD NATIONAL DATA EXCHANGE SYSTEMS

LAWS AND REGULATIONS

Ghana's eGIF Implementation Guide, published in 2009, is considered the precursor to many data policies, and as such, set out the roadmap to future policies on data sharing.

In 2019, the government passed the Payment Systems and Services Act of 2019 to regulate the sector and protect consumers. In 2020, the Digital Payments Roadmap was issued by the Ministry of Finance, which aspired to "build an inclusive digital payments ecosystem" and drive "a cash-lite Ghana." The roadmap was aligned with the National Financial Inclusion and Development Strategy, which aimed – in part – to realize Ghana's vision of "increasing the availability of a broad range of affordable and quality financial services that meet the needs of all Ghanaians and are provided by sound, responsible, and innovative financial institutions." That same year, the Digital Financial Services Policy[6] was developed, largely due to the COVID-19 pandemic and limited physical interactions, which made digital transactions a necessity in many countries.

Beyond these specific payments policies, Ghana enjoys a strong policy and regulatory enabling environment for data exchange. This includes a well-established Data Protection Act of 2012, a National Data Sharing Policy, as well as a subsequent Right to Information Act enacted in 2019.

Additionally, in 2022, the Ghana Government Enterprise Architecture Framework was established "to provide the ministries, departments, and agencies with a foundation for two essential activities – performing strategic planning and investment management and providing direction for systems engineering activities in support of their business needs."

Specifically, this framework set out an enterprise architecture implementation process, so that policies such as the National Data Sharing Policy would have a legal foundation and framework to support implementation.

TECHNOLOGY ARCHITECTURE

In the absence of progress on Ghana's national data exchange hub, Ghana.gov offers insights from a technology perspective. The platform was built on centralized, open-source architecture. It connects all service-flows and workflow systems of government ministries, departments and agencies to a common services platform, which standardizes all service activities and enables easy monitoring and customer management.

Ghana.gov seeks to:

- Process all payments and transfers (both electronic and cash) against predefined service flows of each ministry, department, and agency.
- Manage post-payment workflow, customer notification, feedback, and service ratings, thereby enabling the government to fulfil its goal of creating a cash-lite economy.

While most ministries, departments, and agencies are using the platform to some extent, practical adoption of the technology has been slow among some, due to hesitancy to adopt new behaviors and move away from paper processes.

ROBUST AND RESOURCED INSTITUTIONS

The 2019 Open Government Partnership Global Report[7] rates Ghana highly on transparency indicators, including anticorruption, civic space, open policy making, access to information, and fiscal openness. Ghana publishes information on the beneficial owners of any entity who wins a government contract. Additionally, the government has expanded an existing company register to develop a beneficial ownership database. And,

in fact, this was part of the world's first global, open beneficial ownership register, the Open Ownership Register Standard.[8]

However, while Ghana ranks highly around government transparency, which is a crucial factor towards building trust in data exchange efforts, institutional mandates have been a constraint to achieving greater data exchange implementation.

Firstly, the National IT agency, under the Ministry of Communications and Digitalization, would normally take the lead on data exchange processes. This tends to be the case in many countries. However, the National Technology Agency (NITA) as well as the Cyber Security Authority are also under the Ministry of Communications and Digitalization (MoCD), along with another agency, and all have similar mandates. This has created ambiguity around roles and authority and has impacted budget allocation. In turn, this fragmentation has hindered the country's national data exchange efforts.

Secondly, NITA's creation in 2008 replaced the Central Systems Development Unit, which was a department under the Ministry of Finance that had more power and resources to govern the government's transition into the IT economy. When it was operating, the Central Systems Development Unit recruited IT officers to be placed within all ministries, departments, and agencies (the Ministry of Public Service has since taken over that mandate). They also serviced and provided all ICT software and hardware. In contrast, NITA has considerably more limited resources and mandates on most digital initiatives. This is due, in part, to regular change of governments in Ghana where each new administration remakes itself in its own image. However, the result has been a weakness in NITA's ability to advance implementation and adoption of national data exchange systems.

Conversely, Ghana has driven a thriving Fintech landscape and effective data exchange practices within the sector, of which the Ghana Fintech and Payments Association was established to promote the advancement of financial technologies and payment systems. The Association serves financial technology professionals, companies and start-ups, as well as other entities, and aims to:

- Improve the enabling environment by facilitating stakeholder interaction and exchange of data and information in the sector.
- Be a mouthpiece and voice for new financial technologies, and especially servicing the unreached last mile stakeholders in the countryside.
- Advocate for Fintech companies by influencing policy and regulatory frameworks, campaigning for greater inclusion and accessibility of digital financial services.
- Empower the youth by providing employment opportunities for them in the sector.
- Ensure consumer protection and data privacy.

CAPACITY BUILDING AND SOCIETAL ENGAGEMENT

Ghana has a history of embracing open, transparency movements and promoting access to information and data sharing. Being one of the few democratic countries in Africa, it also has a vibrant civil society.

The media and civil society in Ghana are actively involved in promoting open access to information from the government. For example, the Right To Information Act was passed largely due to significant advocacy efforts by civil society organizations. These organizations have continued to engage with the government to ensure the implementation of the Right To Information Act meets citizens' expectations.

The government has also been intentional with its efforts to equip citizens with transparency and mechanisms for engagement, outlined in many of the country's policy documents and approaches, such as the National Open Data Plan.

Despite Ghana targeting rapid digital transformation, there remains hesitancy among people to switch to digital systems. For example, today, people can register for a new company online, yet many users still come to the Registrar department in Ghana's capital, Accra, to complete the process manually. Officials attribute this to limited knowledge of how to use the system and resistance to change. In response, the government has attempted to create more awareness channels for the online process at its sub-national centers, in the hope that improved communications and understanding would help ease the transition for people.

IMPLEMENTATION INSIGHTS

DECENTRALIZATION OF DATA EXCHANGE EFFORTS

Tackling gating factors to advancing national data exchange systems can help maximize the collective value going forward.

Ghana's broad digital transformation and comfort with open and transparent data practices, paired with a fragmented landscape of private investments and the involvement of multiple government authorities, has resulted in a decentralized approach to data exchange systems.

Many ministries, departments, and agencies have undertaken their own initiatives to maximize the use and reuse of data. These include but are not limited to:

- The Ghana Revenue Authority (GRA) created an eTax portal, which uses the Tax Identification Number (TIN) as the identifier and connects with a digital business registry. The eTax portal allows taxpayers to register (if needed) for a TIN, manage their profile, submit tax returns online, and make electronic payments to settle liabilities. The business registry, created through a public-private partnership and supported by both NITA and the Ministry of Finance, offers entrepreneurs an online portal to register their businesses and pay associated fees electronically. As part pf the process, a new company is automatically issued a TIN, which is a requirement for all importers wishing to bring goods into Ghana.

- Ghana Post developed a geotagged database of all addresses in the country. This makes it easy for the government to identify and authenticate locations.

- TradeNet Services, the Singapore-developed platform, is widely used in Ghana. TradeNet permits the logistics community to exchange trade related documentation electronically with all agencies involved in trade related processes.

Even in instances where database linkages are happening, they are generally negotiated and signed bilaterally. For example, this is the case with the eTax portal for business registration. Initially managed through a public-private partnership with a Singapore-based company, today it connects with the databases at the Revenue Authority (GRA), National ID Authority databases, and Ghana Post via an API. Management of the integration has since moved to a local vendor but remains project based, as opposed to part of a consolidated national data sharing regime.

While Irembo's reported successes are impressive, some critics claim the platform is still an elite service, catering to those with means. In particular, some state that Irembo is not sufficiently attuned to the digital divide, which remains a major problem in Rwanda. Despite the agent model, Irembo still faces challenges due to limited internet use, with the estimated number of users at 30% of the population.

Affording internet-enabled devices, such as smartphones and computers, is also still a challenge in a country where nearly 50% of the population is still multidimensionally poor[4]. To counter these issues, Irembo rolled out an alternative solution – USSD – that can run on basic phones.

This approach offers important takeaways:

- Addressing ambiguity around roles and authority among internal actors will help stem fragmentation of efforts.
- Building trust and aligning incentives across government stakeholders is critical to ensuring buy-in and adoption of national data exchange practices.

FINANCIAL SUSTAINABILITY

Exploring long-term financial viability and opportunities to ensure sustainability of data exchange efforts remains essential.

In recent years, Ghana has received international financing to support some of their digital transformation efforts. For example, the E-Transform Ghana initiative aimed to harness information technologies, such as Wide Area Networks (WAN), the internet, and mobile computing to transform service operations and change the way government services were provided. The initiative was refinanced to the tune of $115 million in 2020 through a World Bank Loan. Following this, in 2022, the World Bank provided a further $200 million "to accelerate Ghana's digital transformation agenda for better jobs."

Conversely, Ghana.gov was built in collaboration with the government – namely the Ministry of Communications and Digitalization and Ministry of Finance – and the private sector, led by the Fintech Association. Private companies, Hubtel, ExpressPay, and IT Consortium, provided the technology infrastructure and the payment gateway for the platform.

Payments for government services delivered by ministries, departments, and agencies on Ghana.gov are pooled in a consolidated fund in the Central Bank of Ghana. Ministries, departments, and agencies receive back only 16% of their revenue, an issue that has made some unhappy and unenthusiastic about using the platform.

This approach offers important takeaways:

- Building and sustaining good data exchange systems requires a well-considered strategy coupled with long-term investment and commitment.
- Opting for a public-private partnership funding model can offer a clear pathway to financial sustainability, but can also come with the potential of the traditional concerns around vendor lock-in.

CATALYZING USE CASE

Thinking beyond a single presented use case can provide an opportunity for greater action and impact.

In many ways, Ghana.gov has been a more galvanizing force for an integrated approach to data exchange than the centralized – and top down – efforts to implement a national data exchange hub. Ghana.gov has provided the government with a use case that has – and can continue to - motivate government-wide interest and ultimately, increase value. Opportunities to leverage this include:

1. Strengthening the National IT Agency as the coordinator of the effort, including increasing funding and improving HR capacity.

2. Implementing initiatives to support behavior change and change management within ministries, departments, and agencies.

3. Adopting collaborations with the private sector to drive a dynamic ecosystem of initiatives and innovation efforts.

This approach offers important takeaways:

- Finding the right galvanizing use case can help drive buy-in, collective action, and ensure sustained engagement across government stakeholders.

- Thinking systemically, instead of focusing on a solving one problem, can expand value for a wide range needs and stakeholders.

CONCLUSION

While Ghana is yet to implement a nationalized approach to their data exchange systems, the country's decentralized sectorial practices offer great promise.

Ghana's thriving Fintech landscape, and the resulting payments portal, has proved an effective catalyst for streamlining services and data exchange. It has also significantly influenced the public sector regulatory and financial environment, creating an important use case for innovative data sharing platforms.

However, to make progress on implementing integrated national data exchange systems, the government is encouraged to explore and address some of the gating factors, such as buy-in across stakeholders, hesitancy to change behaviors, and addressing long-term financial sustainability.

Overall, Ghana's data exchange journey holds many lessons for national governments looking to maximize the use and reuse of data while also fostering a vibrant sector of entrepreneurs and building transparency with people.

To learn more about the recommendations for policymakers and funders based on the wider body of research, read our insights paper on national data exchange systems.

ENDNOTES

1. "Data can drive shared prosperity for governments, businesses, and citizens. Unlocking it requires trusted data exchange." Digital Impact Alliance. (2024) .
2. Ghana Digital Economy Diagnostic. The World Bank
3. eGIF Implementation Guide.
4. Open Government Partnership.
5. Open Government Partnership Initiative, National Action Plan. (2013).
6. Digital Finances Services Policy.
7. Open Government Partnership Global Report, Volume II.
8. "Ghana announces partnership with Open Ownership." (2017).