Digital Impact Alliance

Governing Data to Support "Good" Digital Transformation

Leadership Series Brief #4

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Digital transformation holds enormous potential to reshape economies and societies across the globe. It creates new pathways out of poverty by expanding access to the formal economy and financial services, enabling an effective targeting of policy and delivery of services, and creating new information networks at unprecedented speed and scale. However, without intentional action, digital transformation can just as easily, and perhaps more naturally, exacerbate exclusion and inequality by fuelling jobless growth, deepening discrimination, undermining trust in critical institutions, and eroding social norms through data privacy breaches and targeted disinformation campaigns.

How data is governed will be a key determinant of whether digital transformation is a driver of socioeconomic benefits. Indeed, as digital transformation accelerates, increased access to digital technologies, increased time spent online, and increasingly diverse digital products and services are combining to expand the amount of data generated dramatically. Governments are now faced with complex and rapidly evolving policy decisions regarding leveraging that data to maximize its value and impact on development while also ensuring that it remains secure and that privacy is preserved.

These questions have been put into sharp relief by the COVID-19 global pandemic, which has highlighted both the promise and the perils of data. The crisis is putting governments, economies, and health systems under intense pressure. The urgent need to simultaneously manage associated risks, develop treatments, and mitigate the pandemic's secondary social and economic impacts has led to numerous digital applications and tools for

About DIAL's Leadership Brief Series

This series synthesizes existing learning and presents digestible takeaways for senior digital development leaders investing and innovating at a systems level. They cover key topics from DIAL's issue portfolio and may be updated from time to time.

sharing and analysing data. At the same time, personal data from individuals' use of digital platforms are also being used to monitor the virus's spread; provide notifications on potential exposure; and, in some countries, more controversially, to help enforce restrictions on movement—amplifying concerns regarding surveillance, the consolidation of power and data security.[1]

While governments across the globe will continue to grapple with the opportunities and risks associated with data use, such risks are particularly acute in low- and lower-middle-income countries (LMICs), where governments are navigating complex policy choices against the backdrop of human and institutional capacity constraints. Through its work with LMIC governments and a broad network of global development actors supporting digital transformation, the Digital Impact Alliance (DIAL) of the United Nations Foundation has developed practical insights into some of the data use and governance challenges that LMIC governments face as well as insights into the environments in which these decisions are made. Broadly, this work has included three related but distinct efforts:

1. investing in data for development (D4D) tools, such as FlowKit and Open Algorithms, to promote better decision-making and working directly with LMIC governments to identify the use cases for mobile network operator (MNO) data to drive development outcomes and assess opportunities and constraints to fully maximizing its support of "good" digital transformation;
2. assessing emerging models and the notable features of inclusive, collaborative, and participatory mechanisms for developing and implementing data governance policies and practices; and
3. examining metrics and models that could support the replication of approaches to data governance that maximize development impact.

Throughout these efforts, DIAL has experienced firsthand several findings that surfaced in the World Bank's 2021 World Development Report *Data for Better Lives*. Most notably, data governance and responsible data use require an ecosystem view. In other words, policies, laws, and regulations are essential but insufficient to realize the development potential of data. To that end, DIAL views its work on data through the lens not only of specific applications or emerging policies and laws but also of institutional constructs, the underlying technical architecture to facilitate data flows, capacities within and working alongside governments and the private sector, and the role of civil society and other relevant stakeholders. As DIAL works with LMIC governments to accelerate and strengthen the impacts of their national digital transformations, the opportunity to leverage data for more effective and transparent public services is of particular interest. More specifically, DIAL's work to promote "good" digital transformation focuses on building digital transformation ecosystems and governing the resultant data to maximize the opportunities for participation, individual agency, choice, and trust.

With these in mind, the following brief focuses on how to approach data governance to successfully advance these goals, highlighting specific insights and actionable guidelines that have emerged from DIAL's past work. These recommendations are supported by a review of the recent data governance literature and seek to illuminate emerging practices, policy options, and important lessons relevant to policymakers and those who advise them.

Takeaways

- Data holds the potential to accelerate national digital transformation, but common challenges to sharing data constrain that potential.
- Inclusive policymaking mechanisms for data governance enhance public trust and support digital transformation but face significant constraints regarding effective implementation.
- Strengthening the mechanisms for measuring and monitoring how data is governed remains a significant challenge for all countries.

BOX 1: Definitions

- **Digital transformation:** As an outcome, digital transformation refers to the socioeconomic effects of digitization and digitalization. As a process, it disrupts, reshapes, and reinvents traditional services, economies, and societies and challenges organizations and the enactment of socioeconomic activities.[2]
- **National digital transformation:** National digital transformation, at an outcome level, refers to the economic and societal effects resulting from digitalization as it disrupts and reinvents innovative domains across the economy and society of a nation, including government institutions.[3]
- **Data subject:** A data subject refers to an identified or identifiable natural person. They can be identified, directly or indirectly, by reference to an identifier, which may be a name, an identification number, an online identifier, or location data. They may also be identified using one or more factors specific to the operating environment or their physical, physiological, genetic, mental, economic, cultural, or social identity.[4]
- **Open and inclusive policymaking:** Inclusive policymaking is an approach to policymaking that aims to be transparent and responsive to as wide a range of stakeholders as possible.[5] Accordingly, the approach overrides differences across race, gender, generation, geography, and class to ensure equality of opportunity for all. The aim is to include diverse views in the policymaking process to determine an agreed-upon set of institutions and structures that govern social interactions. When adopted by governments, this model offers the opportunity to improve policy performance through partnerships and collaborations among citizens, civil society, businesses, and other stakeholders to deliver policy outcomes and engage with priority setting, stakeholder selection, and implementation strategy. Such collaborations can be led by governments while working with an array of partners to pool resources, experiences, lessons, and digital efforts across multiple sectors to break down previously siloed approaches to policy discourse.
- **Responsible data use:** Responsible data use is a concept that outlines the collective duty to account for the unintended consequences of working with data.[6] This entails the application of ethical principles regarding transparency, fairness, and respect when handling the data of and concerning people. While handling such data, it is imperative to build the trust necessary for digital innovation. Although this need not precede transformation, prioritizing people's rights to consent, privacy, security, and ownership when using data for social change can be a key driver of transformation.
- **Whole-of-government approach:** The whole-of-government approach (WGA) is an approach to public service delivery where a national government and its ministries, departments, and agencies work together toward a shared goal. The government adopts a coordinated response to national issues for policy coherence,[7] which, in digital transformation initiatives, may be formal or informal. This approach also encompasses modular and interoperable technologies that help governments deliver services more openly and efficiently.

Takeaway #1:

Data holds the potential to accelerate national digital transformation, but common challenges to sharing data constrain that potential.

Digital transformation or the adoption of online operating models and the general shift of socioeconomic activities to online platforms are reshaping the functioning of governments, businesses, and societies. The hyper-connected ecosystem and interactions have resulted in the generation of massive datasets,[8] and the exploitation of these has enabled the establishment of new industrial models that underpin a data-driven economy. This has increased private sector productivity and enhanced public sector efficiency and accountability.

Estonia, often held as the standard-bearer for digital transformation, has the largest data economy as a portion of the gross domestic product (GDP) in Europe. It has successfully moved 99% of its public services online, 98% of its citizens use digital IDs, and more than 10 million digital signatures are produced annually.[9] This has contributed to 2% savings in annual national GDP. Similarly, Rwanda has seen efficiency gains and economic value created through investment in data systems to advance its national planning and development. Compelled by the realization that a good digital government can act as a foundation for a data-driven economy, Rwanda has created a globally recognized digital/e-government portal called *Irembo*, providing over 100 government services directly to citizens. Furthermore, the Government of Rwanda embarked in 2021 on an ambitious digital transformation program to harness Rwanda's big data to enhance *Irembo's* capabilities, with building an inclusive digital economy being a core focus.[10]

DIAL's Data for Development (D4D) program in Malawi has illuminated the importance of this ecosystem-based approach to unlocking the value of data to preserve privacy and support individual rights.

Importantly, these successes reinforce that technologies alone do not guarantee data will be used in the service of individuals and nations. In both examples, introducing data-driven technology systems has been complemented by investment in human and institutional capacities and supported by robust policies and regulations. Without deliberate action to ensure these complementarities are in place, the value of data may be constrained and, perhaps more naturally, consolidate control and influence among the powerful few and current data holders.

For instance, DIAL's Data for Development (D4D) program in Malawi has illuminated the importance of this ecosystem-based approach to unlocking the value of data to preserve privacy and support individual rights. On the one hand, data drawn from MNOs have been harnessed to develop epidemiological models, and these have helped the government proactively inform COVID-19 containment measures and provide additional insights regarding where to deploy health-related public services.[11] For example, the Ministry of Health secured a pipeline to receive anonymized call detail records (CDRs) from network service providers. The CDRs were overlaid on the geospatial data from base transceiver stations, administrative boundaries, and the national population census and, in this way, provided insights into the populated areas and population flows.[12] Decisions on the potential locations of health facilities were then informed using an optimization model. If such models can be optimized, institutionalized, replicated, and scaled across sectors, sustainability concerns can also be addressed. Hence, there is a need to build local capacities to explore and define use cases across sectors that can draw benefits from MNO data for public benefit. However, on the other hand (and more often the reality), a lack of trusted data sharing systems and collaboration mechanisms as well as limited data to complement the MNO data constrain the full potential of such data.

Takeaway #2:

Inclusive policymaking for data governance enhances public trust and supports "good" digital transformation but faces significant constraints regarding effective implementation.

The complexities of governing data are compounded by the pace of change in the digital economy – not only in the rapid introduction of new technologies but also in evolving business models and consumer expectations with regard to their rights and capabilities in a digital society. Recent research by DIAL found that an intentional focus on cross-sectoral investment and coordination can lead to more successful digital transformation outcomes. This work also emphasized the central role governments must play in building ownership among different segments of the population to better understand the risks associated with digital transformation. This will help drive the adoption and sustainability of digital services and ensure long-term accountability. In general, such research underscores renewed attention among policymakers regarding supporting inclusive and participatory processes to inform the policies, practices, and institutions that shape national digital transformation.

A whole-of-government, participatory approach thus provides a meaningful mechanism to provide all stakeholders a voice and support new models for extending the value of data to other groups.

Concerning data governance specifically, as noted above, the benefits of the data economy tend to be captured by stakeholders who already hold or have access to data, posing a daunting challenge to other stakeholders.[13] A whole-of-government, participatory approach thus provides a meaningful mechanism to provide all stakeholders a voice and support new models for extending the value of data to other groups. It is thus important to ensure that policy designs consider the needs of the traditionally underserved and underrepresented segments of society.[14] The WGA approach is sensitive to the principles of inclusion and enhanced cooperation to gain consensus on data, which is crucial for allowing digital transformation to drive socioeconomic outcomes. Overall, it is critical to reconsider the policymaking models in a manner that brings together and coordinates a far wider range of efforts and interests.

For example, in 2019, DIAL partnered with the Smart Africa Alliance for a Digital Economy Initiative to support the latter's member states in their national digital transformations and data use efforts. DIAL committed direct support to the Government of Sierra Leone, which resulted in the development of a national digital development policy to provide a broad vision to shape the development of a digital development strategy, a digital government roadmap, and a data use strategy. The effort focused on engaging stakeholders—including the private sector, media, and civil society organizations—and helping them understand the ecosystem: the laws, policies, and institutional frameworks. This effort was inspired by the need to develop policy recommendations and positions that had the trust of a broader range of stakeholders, including often-excluded segments, such as women, youth, persons with disabilities, and citizens living in rural areas. The approach enabled the government to identify the contextual priorities, constraints, and opportunities unique to the digital and data economy of Sierra Leone better, and

the resulting national digital development policy was inclusive and represented the values and needs of the population equitably to promote better decisions and outcomes and ensure a just society. Further efforts were made to integrate the visions of regional and continental instruments and frameworks, such as the African Union Digital Transformation Strategy, 2020–2030, Pathways for Prosperity Commission Digital Roadmap (2018–2020), and the World Bank's Digital Economy Diagnostic for Sierra Leone. These promoted a contextual understanding of local, regional, and continental concerns and enabled the outputs of the partnership to be adopted and utilized.

While the benefits of inclusive policymaking for data governance are becoming increasingly clear, recent DIAL research has also found persistent barriers to engaging in such processes, including the following:

Resource intensity: Inclusive policymaking requires increased costs, timelines, and human resources. There is thus an emerging consensus that governments rarely have the resources necessary to sustain such processes. While this clear resource gap manifests itself in various ways, it highlights the importance of acknowledging that inclusive approaches represent a fundamental shift in policymaking and must be met with commensurate resources.

Sustaining alignment of incentives: Given the resource intensity outlined above, inclusive policymaking does not occur organically and must be achieved through various factors, from political influence and donor priorities to public pressure. These must be aligned to compel stakeholders to reimagine how they might work together and ultimately disrupt default policymaking mechanisms. While these incentives need not be aligned permanently, alignment needs to be sustained in a manner that matches the time horizon, and it must be robust enough to drive collective action.

A limited number of clear and compelling use cases: Like other cross-sectoral development efforts, data governance benefits from specific use cases and the views of diverse stakeholder groups. However, too few positive use cases resonate in emerging markets. In the absence of a clear value proposition, efforts by diverse groups to engage in policy-shaping can be inconsistent or factional.

The need to strengthen the evidence base: Related to but distinct from the identification of compelling use cases, the generation of a body of evidence around the impacts of particular elements of data governance is a key organizing force. It is critical to enter a policy debate with concrete proposals supported by evidence to avoid debating in the abstract or developing a position based upon perception. Given the complexities and cross-sectoral nature of data policy, certain trade-offs must inevitably be made; however, such compromises are too often politicized or driven disproportionally by a limited few. Evidence is essential in overcoming these challenges and can anchor more substantive debate. The availability of such evidence remains a challenge in many contexts at a national and even global level. This is a gap that must be addressed.

With these issues in mind, there is an opportunity for DIAL and its partners to address the outlined constraints by investing in the capacity of diverse stakeholders to participate in policymaking and working with governments to foster trusting relationships and ensure they are prepared to respond in clear and transparent ways to support wide participation in the policymaking process.

Takeaway #3:

Strengthening the mechanisms for measuring and monitoring how data is governed remains a significant challenge for countries.

Data governance requires constant and deliberate attention throughout the entire data life cycle to ensure that data is underpinning "good" digital transformation.[15] However, too few metrics exist to understand and monitor the impact of data governance decisions across the data life cycle.

For instance, DIAL's D4D initiatives in Malawi, Mozambique, and Tanzania have illustrated the importance of statistical capacity, the role of national statistical offices, and the need for innovative approaches to data aggregation and modeling to support a variety of use cases.[16] While the use cases are usually sector-specific, such as health or disaster response, there is a need for high-quality data that is representative and impact-oriented. For example, a recent peer review of the work in Malawi highlighted the importance of measurement when validating the assumptions of the data models deployed and leveraging insights from users to ensure such models have greater accuracy and utility.[17]

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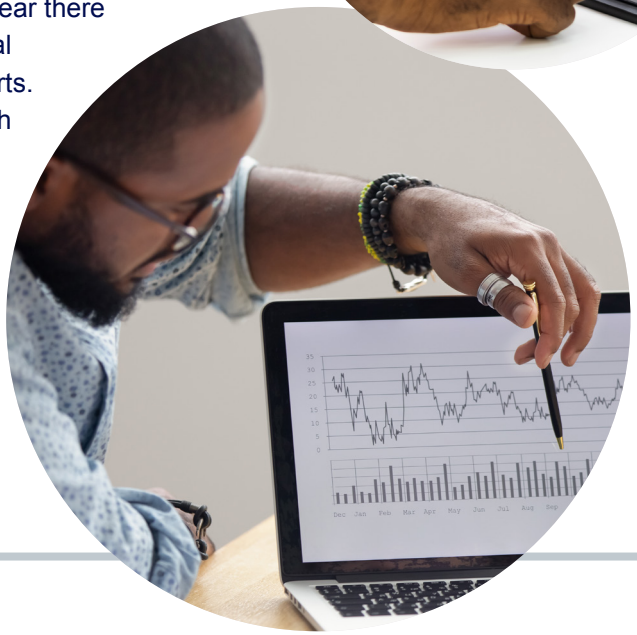
With that said, the ability to measure data accurately—both at the intervention level and the level of data ecosystems—is frequently limited by the challenges associated with participatory processes, as noted previously. These issues tend to limit policymakers' ability to develop impact-oriented metrics that can guide the adaptation of data models and regulations, both across governments and within certain sectors. Specifically, two realities constrain the ability of governments to measure the effects of the data economy on national digital transformation: firstly, a lack of high-quality impact-oriented key performance indicators and metrics for evaluating all levels of the data life cycle and secondly, a deficiency of disaggregated data, which constrains the ability to measure impacts and examine effects on specific populations. While the first issue is related to the ability to understand the effects of data ecosystems on various stakeholders and the overall effects of data regulation, the deficiency of disaggregated data tends to inform how we understand the impacts of specific interventions. At the same time, both issues can impact multiple levels and depend on the environment in which data governance plays out. The design of metrics to help monitor and improve data ecosystems is frequently constrained by a lack of disaggregated data, just as efforts to help improve the flow of disaggregated data are a key part of efforts to strengthen and develop more user-centric, impact-oriented metrics for monitory data.

While there is some evidence that governments have been more effective in using data to adapt government structures than in measuring impacts and adapting to user feedback,[18] both are important to data governance and can be affected by measurement issues. Three issues, in particular, stand out for LMICs as they seek to monitor their data governance regimes and improve measurement and evaluation (M&E): firstly, an absence of

capacity to capture and measure the impact of data, especially through national statistics systems; secondly, a consistent focus on sectoral use cases rather than cross-sectoral use cases; and thirdly, a lack of adaptive regulation to foster a cross-functional understanding of D4D. Perhaps the most significant dimension of the monitoring issue is the lack of capacity many LMICs have in their national statistical systems, which include a range of stakeholder groups.[19] This is compounded by general issues such as resource requirements and data literacy, which tend to be weak.[20]

Moving forward, M&E practitioners will play a critical role in helping to recognize gaps in data governance capacity and identifying paths forward. This may strengthen the ability of policymakers in governments to diversify the methods by which govern and regulate the data life cycle. One approach to addressing the problems of a lack of cross-sectoral use cases and adaptive regulation is to use a more holistic strategy when designing institutions that rebalance the game's rules. One such idea put forth in the World Bank's *2021 Data for Better Lives* report is to build integrated national data systems that help include all aspects of the data life cycle in planning and decision making. Such institutions would allow for incorporating stakeholder perspectives in governance and support more active monitoring and adaptation of data governance to improve social and economic outcomes.[21] While this requires the alignment of financing, capital, and stakeholder incentives, it is a more holistic approach that may help to centralize data monitoring and redefine how it might inform public sector policy and decision-making.

Considering both issues and their associated challenges, it is clear there is a need to understand how measurement issues in large digital ecosystems are entwined with—and often constrain—M&E efforts. A nuanced understanding of data measurement must distinguish between data itself and the use of data, define the causal links between data and socioeconomic outcomes at several different levels and provide a more holistic understanding of data across its entire life cycle.[22] Only when stakeholders across governments work together to continually and deliberately improve how they measure data can successful and meaningful adaptations be made to monitor data throughout its entire life cycle and use it to improve public policy and decision-making.



Conclusion

In today's hyper-connected ecosystem, massive amounts of data are generated, forming a key pillar for digital transformation. Digital transformation requires careful orchestration of digital development policy and data use strategy and policy to enable the responsible harnessing of data and generate actionable insights for desired development outcomes. Therefore, it is critical to invest not only in digital infrastructure but also in strong and robust data governance policies and institutional frameworks to shape the use of data, which will power the digital transformation agenda.

This is the fourth leadership brief that DIAL has released on digital transformation.

1. Accelerating National Digital Transformation
2. Leave No One Behind
3. Public Procurement of Digital Technology
4. Governing Data to Support "Good" Digital Transformation

Endnotes

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