DEVELOPMENT GATEWAY

Designing Data Strategies

A Playbook for Action

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Introduction

For most global development and humanitarian agencies, data has historically been either a niche activity or fragmented task. **But in the era of a 'data revolution for sustainable development' – and in a time of increasing financial scrutiny – institutions increasingly consider data and digital to be a strategic asset.**

In parallel, there are increasing calls for data and digital to be considered through a lens of responsibility and risk. In an institutional setting – and without central coordination mechanisms, clear standards, or formalized practices – risks to individuals and communities may further increase. For this reason, strengthening data governance also aligns with agency mandates to do no harm.[1]

This paper aims to provide a structured overview of lessons learned that may be used by those seeking to develop and implement a data strategy within international development and humanitarian organizations. These lessons seek to account for both data and digital as strategic assets, and as tools that may increase institutional-, community-, and individual-level risk.

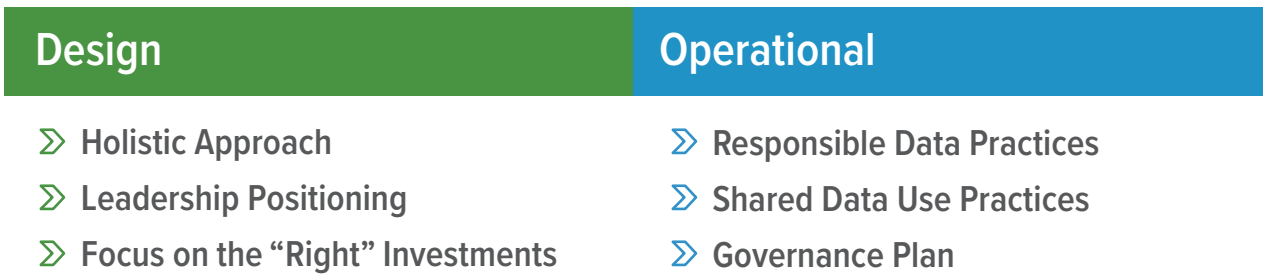
Development Gateway has supported the creation of several organizational data strategies; led research on data systems and processes; facilitated peer learning for organizations interested in data and digital strategies; and developed and integrated data systems governed under existing organizational mandates. Supplementing this hands-on experience, our team conducted a desk review of eight organizational data and/or digital strategies, and held 200+ interviews across six organizations.[2]

From this work, we have found there is no one path to an "ideal" internal data ecosystem. However, we have identified six components for the design and operationalization of institutional data strategies that are – or are increasingly – common considerations within institutions.

We do not consider this a necessarily comprehensive set of considerations, nor do we present this as a "checklist." Rather, we hope this will be a useful starting point that may be adapted by organizational leaders to drive effective data strategies in their institutional contexts.

In what follows, we elaborate on the proposed design and operational components, providing brief introductory text and concrete examples of what these components have looked like in practice when used by development and humanitarian organizations.

Figure 1: Data strategy components



1. For example, see Sandvik et. al. (2017).
2. Organizations include Global Affairs Canada, Icelandic International Development Agency, Office of the UN Secretary-General, Plan International, Swiss Development Cooperation, UK Department for International Development (DFID), US Agency for International Development (USAID), US Millennium Challenge Corporation, UNHCR, UNICEF, United Nations Development Programme (UNDP), and the World Health Organization (WHO).

Institutional Levels

Comprehensive data strategies typically shape – and are shaped by – the systems, processes, policies, and cultures at each "level" of an organization. For development and humanitarian agencies, these generally include central, regional, country, and program levels.

Figure 2: Key decision spaces in global development and humanitarian agencies

Central

Decisions involve objective-setting, strategic direction, policy creation/enforcement, and communications

Output, outcome, and financial data are most used to communicate impact

Regional

Decisions involve coordination and advisory of country and program levels

Country and program output and financial data are most used

Country

Decisions involve portfolio and program planning

Data are most used for communication, coordination, and portfolio analysis

Program

Decisions involve comparing current activities to needs

Data are most used for service delivery and monitoring, evaluation, research, and learning

Within institutions, data use strongly depends upon relative decision space: organizational and individual expectations, incentives, and resources.[3]

At the central level, decisions generally involve objective-setting, strategic direction, and public communication. Output, outcome, and financial data are most used to communicate global impact.

At the country level, data are most used for aligning plans and monitoring practices with central and regional strategies.

At the regional level, country and program resource allocation decisions are informed by output and financial data, and are reported to headquarters.

At the program level, data are most often used to make service delivery decisions – comparing current activities to needs – and communicating rationale to higher levels.

3. (Stout et. al., 2018).

Data Strategy Model: Design Components

Designing a data strategy requires understanding the external data and digital context, and internal strategic goals and resource capacities. With this understanding, institutions make the 'right' investments: investments that close information and skills gaps, and align what the organization does well with what it hopes to achieve.

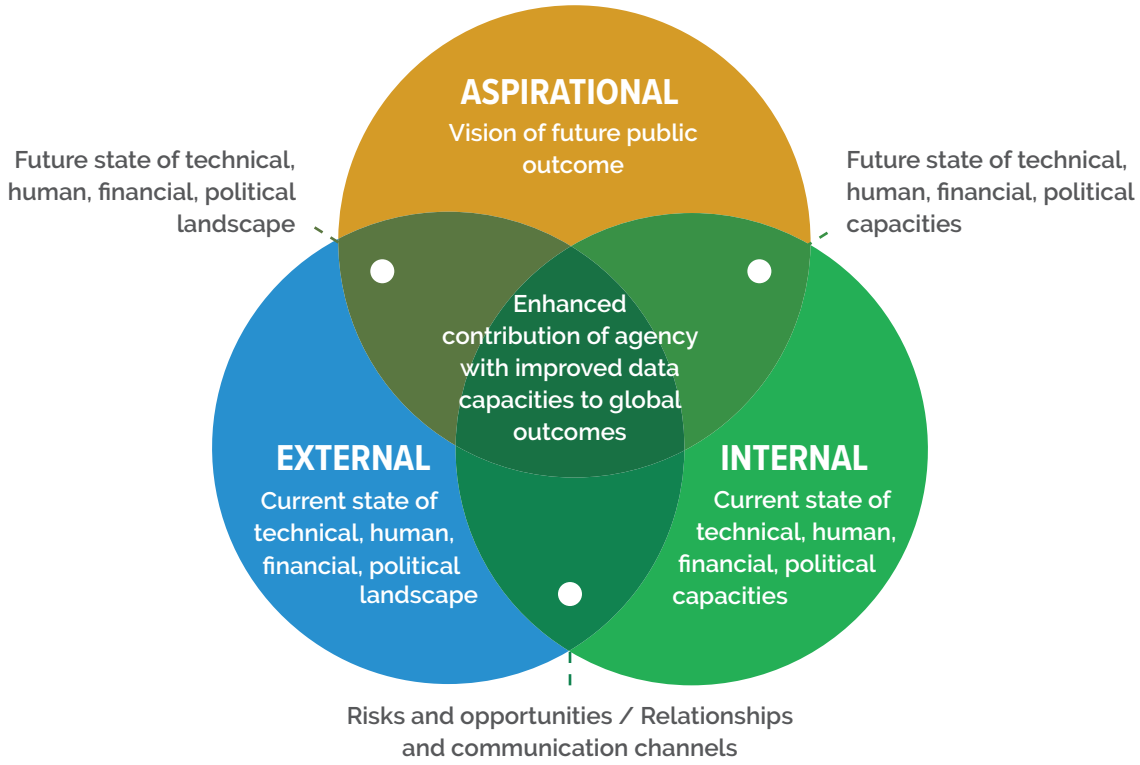
I. HOLISTIC APPROACH

Agencies often benefit from approaching strategy development with an eye to understanding:

(i) what initiatives or events have happened to-date;
(ii) the current state-of-play within and beyond the organization itself; and
(iii) what structures and resources must be put in place to achieve a desired future state.

For this reason, we recommend the strategy process begin with a landscape analysis or evaluation. The aim would be to identify and understand internal decision-making processes and external factors to inform the design and implementation of a data strategy.[4]

Figure 3: Factors that inform data strategy design



4. Examples of such analyses include Development Gateway (2017), Bhatia-Murdach et al. (2018), and Ladek et al. (2019).

The output of such an analysis can provide an internal and external contextual frame. This frame can be used in efforts to harmonize data investments related to an organization's data-specific and operational strategic vision (see *Focus on Right Investments* below).

The frame can also highlight gaps in governance and policy, with the ultimate goal of supporting meaningful data use and preventing direct or indirect harms.

How should data interact with digital?[5]

A number of agencies have either a data strategy, or digital technology strategy, or both. Agencies with both may have harmonized or distinct strategies.

WHICH METHOD IS BEST?

Our experience has found that data ideally fit into a broader digital strategy. Digital strategies determine an agency's technological 'plumbing,' which guides where and how data will be collected, stored, accessed, and visualized.

Making the data and digital relationship explicit helps ensure information technology and programmatic senior management are aligned. Joint implementation helps ensure agency governance arrangements are clear, and that resources, expectations, and incentives are trained toward a common goal.

II. LEADERSHIP POSITIONING

When developing a strategy, many agencies also reflect on their role in the broader data for humanitarian response and development landscape.

A data strategy could include high-level outputs that reinforce data leadership goals. These outputs may range from producing externally-facing principles and guidelines; to pursuing joint programming or implementations; to building platforms that benefit the common good.

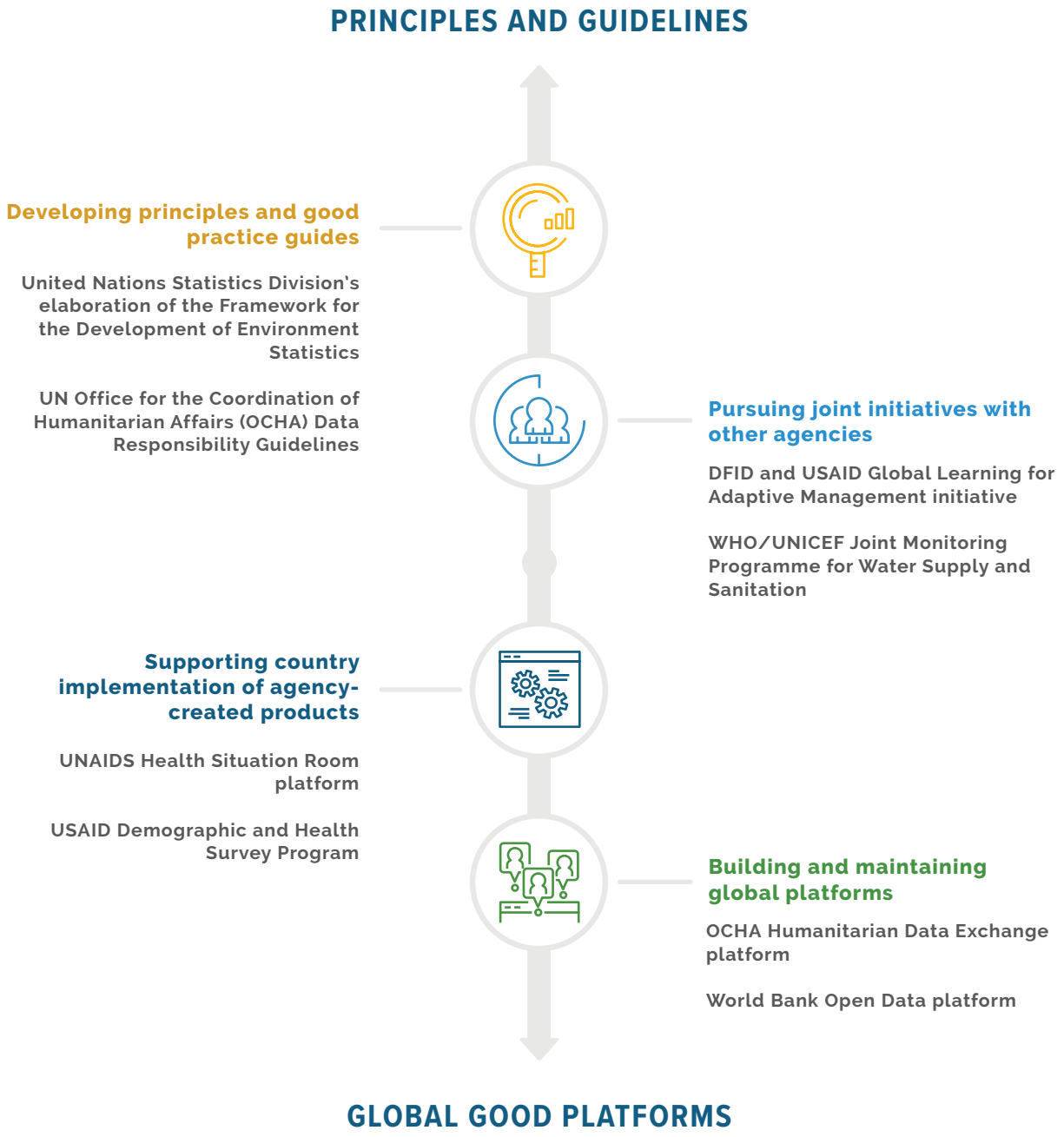
Guided by needs identified through the landscape analysis and their perceived comparative advantages,[6] agencies may consider:

- What is the agency's leadership role vis-a-vis peer organizations – technical expert, standards setter, convener, implementer, data provider?
- What resources (human, financial, technical) can the agency commit to use its comparative advantage in a way that most benefits other actors?

5. 'Digital' can be defined as technology and information systems used for internal reporting and management, as well as program innovation and external communications. Examples of institutional strategies that incorporate digital include those of DFID (2018a, 2018b), Government of Canada (2018), UNDP (2019), USAID (2019), and the United Nations (2020).
6. See Gupta (2015, pp. 18) for an example framework.

Organizations often serve unique roles within the international development and humanitarian landscape. These roles create opportunities for strategic investments in data leadership products.

Figure 4: Data leadership spectrum with example cases



III. FOCUS ON THE RIGHT INVESTMENTS

To maximize the impact of data investments, strategies may take into account an organization's existing data needs and capacities; comparative advantage, and data leadership goals. Together, these can help identify the right investments.

Organizations often have an understanding of either their needs or comparative advantage – but rarely a comprehensive perception of both. The right investments close information and skills gaps, and align with what the organization does well, and with what it hopes to achieve.

Figure 5: Getting to the right data investments for agencies

From the start, we would encourage agencies to seek to mitigate potential risks and identify critical dependencies.[7] For example, the Government of Canada's Data Strategy Roadmap has identified actions across governance, human resources, digital infrastructure, public communications, and innovation thematic areas necessary to support digital transformation.[8]

Data investments that include a mix of "quick wins" and longer-term activities can lay a foundation of support and help make the case for resources moving forward. On pages 7 and 8, we provide examples of investment cases and analyses from four institutions, followed by a more detailed exploration of each investment.

7. CARE USA's *Responsible Data Maturity Model for Development and Humanitarian Organizations* is one tool operationalizing this process (Raftree, 2019).
8. (Government of Canada, 2018, pp. 12-13).

What does focusing on the right investments look like?

DFID: INTERNAL DATA ARCHITECTURE[9]

Context
Gap in portfolio and programme-level analysis: no single system was capturing mid-level results

Leadership Goals
Make evidence-based decisions; prioritize agency learning; enable coordination between central and country levels

Comparative Advantage
Skilled internal team of data and technology experts with experience in international development and country systems

Needs
Ability to answer the question "What is DFID doing in x sector and y geography?" across the DFID portfolio, and improve learning by understanding what has been achieved

INVESTMENT IN
Portfolio-level analytical dashboards, designed in consultation with country and sector teams, customizable and responsive to user needs

OCHA: EXTERNAL DATA DISSEMINATION[10]

Context
Situation analyses presented in narrative format, based on data from disparate sources

Leadership Goals
Coordinate more efficient preparation and response to humanitarian emergencies

Comparative Advantage
Coordination and thematic mandate within the UN system, existing role as data curator and publisher

Needs
More access to real-time data to facilitate analysis, coordination, response, and reporting

INVESTMENT IN
The establishment of the Centre for Humanitarian Data; and creation and maintenance of the humanitarian data exchange (HDX)

9. (Development Gateway, 2017).
10. (OCHA, n.d.; Griliopoulos, 2014; Brzezinski, 2018).

What does focusing on the right investments look like?

UNICEF: PARTNER TECHNICAL SUPPORT[11]

Context
An increasing amount of data-centric opportunities, coupled with decentralized planning and programming, risks 'pilotitis' and inefficient investments

Leadership Goals
Evidence-based interventions and advocacy to further child rights; coordination between central, regional, and country levels

Comparative Advantage
Strong country presence, recognized mandate, and trust-based relationships with country partners

Needs
A way to prioritize the most pressing data needs in each context, and identify where UNICEF is best-placed to support

INVESTMENT IN
Scalable resources to help country teams understand key data bottlenecks, and strategies for tailoring partner technical support

PEPFAR: DATA COLLECTION[12]

Context
Pressing threat of the HIV/AIDS epidemic

Leadership Goals
Consolidate all US Government efforts to achieve measurable progress combating HIV/AIDS through an emphasis on transparency, accountability, and impact

Comparative Advantage
Mandate to consolidate all US bilateral and multilateral funding and activities for the global HIV/AIDS response

Needs
Evidence base on which to make decisions regarding PEPFAR interventions to achieve epidemic control of HIV/AIDS

INVESTMENT IN
Standardized and rigorous monitoring, evaluation, reporting, and data collection processes

11. (UNICEF, 2017; Garin & Powell, 2017).
12. (Schoenberg, 2019; Kaiser Family Foundation, 2020).

Data Strategy Model: Operational Components

Implementing a data strategy requires a combination of technical guidance, personnel support, management leadership, and financial resources. As data and digital tools can reinforce existing inequalities, clear governance arrangements and accountabilities are crucial to achieve a balanced, ethical approach to organizational data use.

I. RESPONSIBLE DATA PRACTICES

Development and humanitarian institutions face the challenge of balancing data protection, privacy, and digital security with expectations around data sharing, transparency and accountability, and appropriate data use.[13]

For example, individual-level data is commonly understood to be sensitive, and good practices exist for responsible de-identification of such information. However, ethical considerations and protocols – such as notice, proportionality, consent, and purpose – may not be commonly understood across an agency setting.[14]

Examples of attempts at incorporating responsible data practices include UNHCR's *Data Transformation Strategy (2020-2025)*, which outlines the agency-wide expectation that:

> *"UNHCR data and information activities will serve specific information needs and defined purposes in order to avoid unnecessary burdens on and potential harm to both those who provide data and those who manage it..."* [15]

The *Considerations for Using Data Responsibly at USAID, OCHA Data Responsibility Guidelines,* and *UN Global Pulse Risks, Harms and Benefits Assessment Tool* documents provide practical resources for institution staff and implementing partners.[16]

13. (US Agency for International Development, 2019, pp. 2).
14. (National Committee on Vital Statistics, 2015, pp. 18-30).
15. (UNHCR, 2019, pp. 6).
16. (US Agency for International Development, 2019); (UN Global Pulse, 2020); (Centre for Humanitarian Data, 2019).

Effecting this balance is particularly important as technology and data can reinforce existing inequalities unless steps are intentionally taken to mitigate this risk.

Beyond a focus on privacy, understanding and designing against the ways in which data can contribute to reinforcing existing inequities, support harmful use (e.g. targeting of vulnerable populations), or restrict freedoms is crucial to ensuring that data programming is responsible and additive.[17]

II. SHARED DATA USE PRACTICES

There is often an assumption that supply of data, tools, and skills will automatically lead to the use of data in decision-making. However, our research shows this assumption fails to hold true.[18] Differences in authorizing environments lead to different data and information needs, incentives, and cultures across organizational levels.

Most agencies have some policies on data management, protection, and use, but ensuring uptake of these policies can present a challenge. Through our work, we have found putting data use into practice within development agencies requires a combination of technical guidance, personnel support, management leadership, and – importantly – financial resources.

Examples of shared data use practices

Technical Guidance

- The Global Migration Group – which includes the International Organization for Migration, World Bank, and UN Agencies – created a handbook with good practices for understanding needs, sources, and gaps in migration data.[19]
- DFID created a data dictionary that provides methodology and definitions behind commonly-used data fields from both internal and external sources.[20]

Personnel Support

- DFID created a "digital ninjas" cadre of staff volunteers who learn new tools and technologies, and are able to provide on-demand support to colleagues.[21]
- The World Food Programme facilitates internal monitoring and evaluation communities of practice and best practices platforms to facilitate staff learning.[22]

Management Leadership

- The Millennium Challenge Corporation's Chief Data Officer is responsible for stewarding data as a strategic asset to support the agency in meeting its mission and learning goals.[23]
- The DFID Chief Statistician has a clear role in overseeing the department's internal Data Roadmap.

Financial Resources

- UNICEF provided catalytic funding to incentivise regional country offices to implement the *Data for Children Strategic Framework*.

17. (UN Department of Economic and Social Affairs, 2018, pp. 46-48, 56-64); (McDonald, 2020).
18. (Stout et al., 2018).
19. (Global Migration Group, 2017).
20. (Development Gateway, 2017).
21. (Pakenham, 2018).
22. (World Food Programme, 2020, pp. 3)..
23. (Vought, 2019).

III. GOVERNANCE PLAN

While there is no "right" way to roll out a data strategy, operationalization processes often reflect an organization's structure. For example, globally-dispersed agencies with strong country office presences may benefit from a more "bottom-up" approach to strategy implementation, where headquarters provides guidance that can be taken and adapted to local contexts.

In addition to an overall roll-out approach, clear governance arrangements – with individual-level responsibilities and accountabilities – can reduce confusion and smooth a transition from strategic goal to operational framework.[24]

One successful method has been the appointment of a senior-level champion with resources and political clout to lead strategy implementation. For example, USAID has a Chief Data Officer and Chief Technology Officer within the Office of the Chief Information Officer, responsible for overseeing the agency's digital and data services.

Figure 6: UNICEF Data for Children implementation approach

Regardless of structure, a balanced approach is particularly useful when considering the operationalization of updated or streamlined data protection practices.[25] Digitization of data collection, sharing, and analysis highlights the temporal aspect of data management, which implies financial, human, and time-resources for the lifetime of data collection, storage, and maintenance.[26]

Such considerations may include plans for data minimization, secure maintenance, and decommissioning or deletion of data at the conclusion of programs – all of which may require actions and inputs from programmatic, information technology, and leadership staff. As a result, the need for clear governance arrangements and division of labor is particularly acute when digital and data strategies are set out in distinct documents and processes.

24. (McDonald et. al., forthcoming).
25. (McDonald, 2019).
26. (Nelson, 2017).

Common Challenges

Even when following the steps above, some agencies and organizations have struggled to successfully implement data strategies. This struggle can usually be attributed to one or more of the following pitfalls:

1. **Lack of financial resources:** Whether a harmonization of existing practices or brand-new ways of working, dedicated (typically new) resources are needed for implementation success. These resources contribute to internal communications, guidance development, and adaptation of strategy implementation.

2. **Tethering to a specific tool or technology:** The data and digital landscape changes rapidly. Strategies must be able to withstand – and adapt alongside – technological advancements. For this reason, we recommend avoiding dependency on a specific innovation, technology, or data.

3. **Considering data and digital as ends in themselves:** As outlined above, data investments can be used to further larger, organization-wide priorities. Modeling and maintaining a culture that incentivizes and celebrates data use – both internally, and for others – ensures that data stewardship is seen as a shared responsibility of all staff across operational levels.

Conclusion

Ultimately, successful data strategies can support more effective stewardship of information and identify efficiencies of scale; judiciously position itself within the broader development ecosystem; and more effectively achieve its mission.

There is no one-size fits all approach to designing and operationalizing a data strategy: but by adapting the above good practice fundamentals, we posit that institutions will be met with greater success in achieving their goals.

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