DPI ROADMAP PLAYBOOK

June 2025 Beta Version

AfricaNenda foundation

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FOREWORD

As the world turns its gaze to Africa in 2025, a historic milestone unfolds: South Africa's inaugural G20 Presidency. This moment transcends mere symbolism—it is a call for Africa to lead global discourse and redefine the future of inclusive and equitable economic transformation. At the heart of this opportunity lies Digital Public Infrastructure (DPI), a cornerstone for unlocking the continent's potential as a unified and competitive force in the digital age.

The African Continental Free Trade Area (AfCFTA) represents a bold step toward economic integration for the continent since its independence. The adoption of the AfCFTA Protocol on Digital Trade and its eight (8) Annexes by the Assembly of Heads of State and Government of the African Union (AU) marked a watershed moment and demonstrates a commitment by AU Member States to eliminate barriers to cross-border digital commerce. By prioritising interoperable digital payments, digital identity systems, and secure data transfers, this legal framework lays the groundwork for a thriving single digital market. These are not merely technical components; they are the arteries of opportunity for women, youth, micro, small and medium entrepreneurs, persons with disabilities, and rural communities, among other underserved groups, to innovate, trade, and thrive across borders.

This DPI Playbook emerges as a critical bridge between ambition and action. Crafted by African voices for African realities, it provides policymakers and practitioners with a roadmap for designing and deploying DPI that embodies our shared principles: inclusivity, interoperability, and digital sovereignty.

My call is to view this Playbook as more than a technical guide. It is a manifesto for Africa's digital renaissance – a vision in which seamless digital systems empower small businesses in Kigali to reach markets in Casablanca, where a farmer in Mauritania accesses real-time data to optimise harvests, and where a young innovator in Lagos scales a solution to tackle climate challenges continent-wide.

The road ahead demands unprecedented collaboration. Governments must harmonise policies; private sector leaders must invest with purpose; civil society must safeguard equity; and development partners must align support with African priorities. Therefore, South Africa's G20 Presidency amplifies our agenda, let us seize this moment to shape global norms on DPI, ensuring they reflect the diversity, dynamism, and aspirations of our continent.

Africa's digital future will not wait. Let this Playbook ignite the urgency, creativity, and collective will to build it today.

H.E. Wamkele Mene
Secretary-General
AfCFTA Secretariat
23 June 2025

FOREWORD

On March 26, 2025, the South African government reached a milestone in its digital transformation journey when Cabinet approved the Digital Transformation Roadmap. Our Roadmap aims to deliver on the Government of National Unity's commitment to inclusive growth, efficient service delivery, and ensuring that government services are accessible to all South Africans. A flagship initiative under Operation Vulindlela - the 7th Administration's structural reform programme led by President Cyril Ramaphosa - the Roadmap is anchored by the Digital Public Infrastructure (DPI) principles of delivering integrated public services safely, securely, and seamlessly.

The Cabinet approval of the roadmap and the subsequent public launch led by the Minister of Communications and Digital Technologies, Mr Solly Malatsi, follows a process of nine months in which we undertook extensive analysis, diagnosis and consultation across government. We also sought to learn from international experiences in Brazil, India and other countries. With the help of many domestic and international partners, we worked out the best way to apply this approach to our own needs in our own context.

If there had been a Playbook on how to create a DPI Roadmap at the time, it would no doubt have guided and perhaps even expedited our journey. This DPI Roadmap Playbook incorporates the learning from our experience, combined with other wider experiences. We trust it will be helpful to other countries which are also on the 'long walk' to digital transformation which benefits citizens and society.

THE PRESIDENCY
REPUBLIC OF SOUTH AFRICA

Khule Duma
Director: Project Management Office, Private Office of the President,
Republic of South Africa
23 May 2025

ABOUT THE PLAYBOOK

The DPI Roadmap Playbook is intended for:

- **Government officials** responsible for overseeing, managing, or taking part in the process of digital transformation in a country who may be in a Digital Government Agency, Ministry of ICT, Presidency or National Planning Agency, regulatory agency such as a Central Bank, or Data Protection Office.
- **Teams at multilateral, bilateral, or philanthropic funding agencies** who provide financial and/or technical assistance to support DPI agendas.
- **Teams at private sector companies, civic sector groups, and academia** who may be contracted by government or funding agencies to support a given country – or countries – in their DPI journey.

The DPI Roadmap Playbook aims to guide countries interested in developing and implementing an approach to digital public infrastructure (DPI) through building national roadmaps. It offers key insights, tips, takeaways, and additional resources to help you understand the process of building a roadmap, as well as how to craft the common elements of an effective roadmap. Throughout the Playbook, you will find practical examples from countries that have embarked on a DPI journey, including India, the UK, South Africa, Kenya, Rwanda, and Ghana – all of whom are at different stages.

The Playbook assumes a background familiarity of what a DPI approach is, as much has already been written about *what* DPI is and about *why* it is beneficial. As such, the Playbook curates these resources in its Annex but does not dwell on these questions. Rather, it addresses the question of *how* to adopt a DPI approach through the lens of one practical tool: a DPI Roadmap.

CONTENTS OF THE PLAYBOOK

HELPFUL TERMS IN THE PLAYBOOK

The DPI Roadmap Playbook introduces various terms and acronyms. Some may be familiar to you, while others may be newer. Their definitions are outlined below to support your effective use of this Playbook.

Term	Meaning
AfCFTA	**The African Continental Free Trade Area** – brokered by the African Union and operationalized in 2021 – establishes a trade bloc across its members with the aim of increasing socio-economic development.
DPI building block	A foundational component of a DPI approach that promotes reuse and interoperability among systems.
DaaS	**DPI as a Packaged Solution**, or DaaS, is a rapid deployment approach that allows organizations to implement DPI building blocks in an accelerated timeframe by using cloud services.
Digital roadmap	A document – sometimes called a blueprint – that sets out **an actionable process to implement changes over a defined time horizon as part of digital transformation efforts.**
Digital transformation	The process of **integrating digital technologies into all aspects of an organization, government, or society**, fundamentally changing how it operates and delivers value to customers or citizens.
DPI approach	A way of designing, deploying, and governing a **foundational, interoperable digital ecosystem** that enables **secure, inclusive, and efficient** delivery of essential public and private services. Read more in the Annex.
DPI journey	The **full lifecycle of a DPI approach from design to implementation** and ongoing operation.
DPI Roadmap	A **specific type of digital roadmap that embodies a DPI approach.**
DPFM	Digital Public Financial Management, or DPFM, refers to the use of **digital technologies, automation, and data-driven systems** to enhance the efficiency, transparency, and accountability of **government financial management processes.**
"+1" DPI approach	An approach to digital transformation that favours small, quick, and incremental improvements to slow and long changes in digital systems. Read more here.
eKYC	**Electronic Know Your Customer, or eKYC,** is a **digital identity verification process** that allows businesses, financial institutions, and governments to verify a person's identity **electronically and remotely.**
G2P	Government to person, or G2P, payments such as social benefits, pensions, or unemployment payments, which are common use cases for a DPI approach.
Hyperscaler	**A large-scale cloud service provider** that offers **highly scalable, on-demand digital infrastructure** for computing, storage, and networking.
IDWG	Inter-Departmental Working Group, or IDWG, is the body set up to coordinate the Roadmap process in South Africa.
Microservices architecture	**A software design approach** where an application is built as a **collection of small, independent services** that communicate via APIs.
Use case	A particular digital application that provides demonstrable benefit to an identified category of users or citizens.
Vendor lock-in	The situation when a company or organization becomes **overly dependent on a specific vendor's technology, products, or services**, making it difficult or costly to switch to an alternative provider.
Whole-of-government approach	**A collaborative and integrated governance approach** where different government departments, agencies, and their stakeholders work together to achieve common objectives.
Whole-of-society approach	A governance framework **extending beyond a whole-of-government approach in which the government collaborates with other sectors of society**, including businesses, civil society, academia, and communities, to address complex challenges. This does not equate to a government collaborating with everyone; rather this approach rests on identifying and engaging with those stakeholders outside of government who are most affected and/or have the most to offer around a solution.

SECTION 1

WHAT IS A DPI ROADMAP AND WHEN DO YOU NEED ONE?

DPI ROADMAP

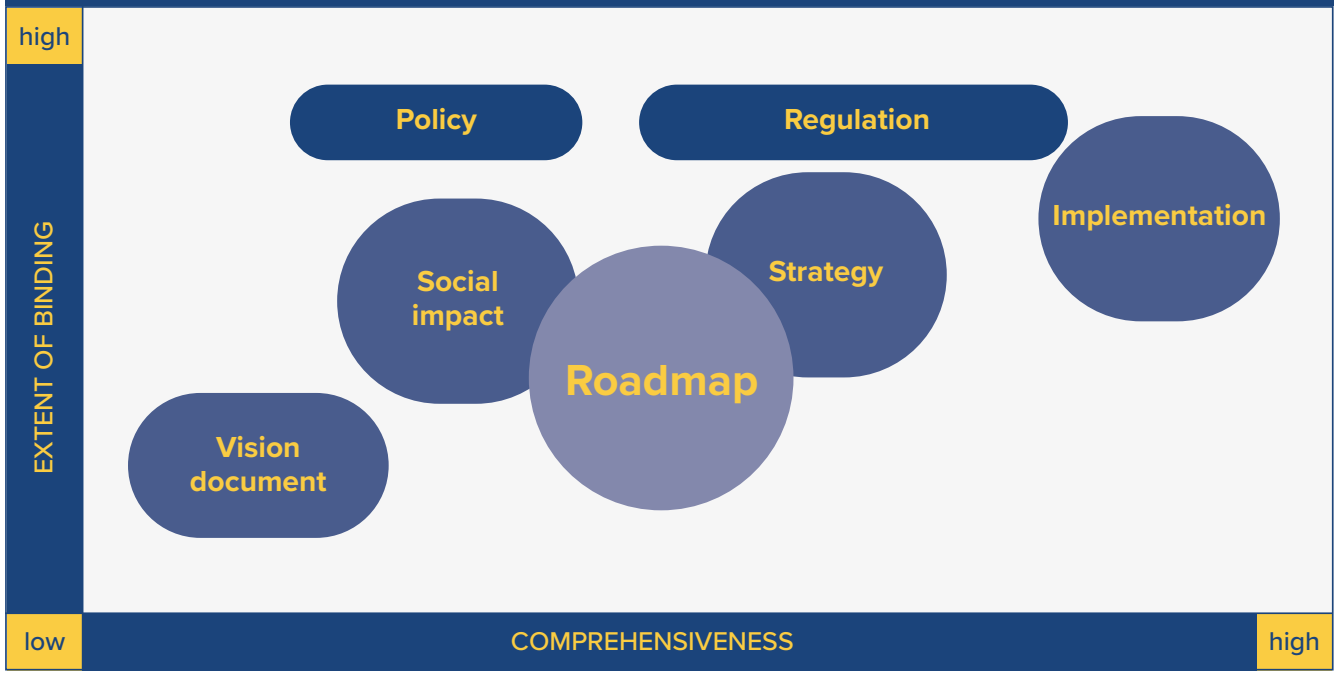
is a valuable tool to assist a national DPI journey in five key ways:

1. **Provides a link** between high level visions and strategies and implementation plans.
2. Helps to **build alignment** necessary for its implementation.
3. Brings the country context into **sharp focus.**
4. **Anticipates risks** and enables accountability.
5. Leads to **alternative actionable approaches** in the short run.

Today, most countries have a digital transformation strategy.[1] An increasing number of countries have signaled both interest and commitment to adopt a digital public infrastructure (DPI) approach to digital transformation.[2] A DPI approach combines open technology standards with robust governance frameworks to address societal-scale challenges that often cut across different sectors. Implementing a DPI approach often involves building and/or enhancing key digital building blocks, such as digital identity, digital payments, and data exchange.

A DPI Roadmap documents actionable implementation steps to guide a national DPI journey and can play a critical role in four key ways.

FIGURE 1: Roadmaps alongside other related concepts



1. A DPI ROADMAP PROVIDES A LINK BETWEEN HIGH-LEVEL DIGITAL VISIONS AND STRATEGIES, AND DETAILED IMPLEMENTATION PLANS

A roadmap can serve as an official signal to embark on a DPI journey or to progress it further, if efforts are already underway. It sets out a clear, feasible destination for the next phase of the journey. Roadmaps navigate the tricky balance between certainty and flexibility – providing sufficient clarity to inform resource allocation around longer-term outcomes, while also allowing for agility to make adjustments along the way. A roadmap is clearly related to other policy instruments like high level visions and strategies, yet also distinct from them in its scope (how comprehensive it is) and its function (how prescriptive it is), as highlighted below.

[1] 148 countries reported having a digital transformation strategy in the 2022 World Bank Govtech Maturity Survey.
[2] Since its launch in 2023, 23 countries have signed up to the 50-in-5 campaign, which requires commitments to share learning, technology, and best practice around DPI.

COUNTRY EXAMPLE 1:

DIGITAL BLUEPRINTS, PLANS, AND STRATEGIES CAN PROVIDE CONTEXT

A number of African Union member states have adopted digital strategies or masterplans in pursuit of national goals.

KENYA: The Digital Economy Blueprint was published in 2019 as one of the first comprehensive frameworks for a whole-of-society approach to digital economy growth in Africa. It was led by the National Communications Secretariat and the Ministry of Information Communications and Technology. The Blueprint provided a foundation for subsequent sectoral implementation plans, such as the National Digital Master Plan (2022-2032).

RWANDA: The Ministry of ICT and Innovation published the ICT Sector Strategic Plan (2024-2029) under the 2nd National Strategy for Transformation in 2024. A whole-of-society approach to digital transformation, the plan outlines three priorities that touch on inclusion, government services, and the economy.

GHANA: The Digital Economy Policy & Strategy was adopted in late 2024, which was led by the Chair of the National Information Technology Agency. A comprehensive whole-of-society approach that focuses on the digital economy, the strategy was published just before a change of government.

None of these documents is a DPI Roadmap. For one thing, the term “DPI” did not exist when the Kenyan Blueprint was launched. However, policy documents like these can serve as the foundation for a flexible process to create a DPI Roadmap. While largely focused on national priorities, these policy documents also set the stage for regional digital integration, particularly within the African Continental Free Trade Area (AfCFTA) framework, where DPI can serve as a key enabler of seamless cross-border trade, payments, and digital services.

Key takeaway: A DPI Roadmap can serve as a practical tool to translate the broad aspirations of national visions into interoperable, scalable, and sustainable digital infrastructure solutions that serve national and regional goals and priorities.

2. THE ROADMAP PROCESS HELPS TO BUILD THE ALIGNMENT NECESSARY FOR ITS IMPLEMENTATION

A good DPI Roadmap helps to build the alignment necessary for its implementation. While good roadmaps take time and effort to create, the investment will likely yield dividends in terms of a smoother – and potentially faster – process of implementation.

3. A DPI ROADMAP BRINGS THE COUNTRY CONTEXT INTO SHARP FOCUS

No two countries are alike, so it naturally follows that no two roadmaps will look alike. The substance of a good roadmap should be customized to the local needs and situation. By reviewing and analyzing the country's context, a DPI Roadmap creates a common understanding of the starting point.

4. A DPI ROADMAP ANTICIPATES RISKS AND ENABLES ACCOUNTABILITY

At best, a poorly designed roadmap gains little traction; at worst, it risks causing delay or even failure. A well-designed roadmap considers risks and safeguards early and addresses them proactively. It defines indicators of progress and calls for their publication to build accountability for execution.

COUNTRY EXAMPLE 2:
WHY INDIA DOES NOT HAVE A NATIONAL DPI ROADMAP

India is well known for DPI building blocks like Aadhaar (digital identity) and UPI (instant payments), which are widely accessible and increasingly used across the whole society. However, India's DPI journey did not rely on a single comprehensive national roadmap, but rather what has been described as an 'invisible infrastructure' of policies, capacities, ecosystems, and leadership which emerged and converged over time.

At the policy level, a series of foundational working papers and frameworks established the intellectual groundwork for India's DPI success. The Open Digital Ecosystems White Paper articulated how to build interoperable digital platforms that could operate at India's scale. The Electronic Consent Framework and the Data Empowerment and Protection Architecture tackled the complex challenges of data rights, privacy, and user control in digital systems. These documents represented deep institutional learning on how to architect digital systems that could serve a billion people while balancing innovation, inclusion, and privacy. Additionally, the launch of Digital India in 2015 provided the overarching vision and political commitment that accelerated these initiatives.

The institutional backbone was equally critical. Organisations like the National e-Governance Division and National Informatics Centre provided technical capabilities and institutional memory built over decades of implementation. These institutions represented not just organisational capacity but deep, accumulated knowledge of operating at India's scale and complexity.

Key takeaway: If a country already has strong alignment around the foundational elements of a DPI approach, including political will, a roadmap may not be necessary.

COUNTRY EXAMPLE 3:
WHY SOUTH AFRICA CREATED A DIGITAL ROADMAP

Digital transformation is not a new concept in South Africa, but despite a proliferation of policies, strategies, and initiatives, a 2024 diagnostic concluded that the country lagged key peers. It highlighted a lack of coordination across government, leading to duplication and missed efficiencies.

In response, the Office of the President convened an Inter-Departmental Working Group (IDWG) in September 2024. The IDWG was led by a Steering Committee chaired by senior civil servants in the Presidency, the National Treasury, and the Department of Communications and Digital Technologies. It convened participants from over 20 national government entities in a six-month, whole-of-government process, culminating in a Digital Transformation Roadmap launched in May 2025. This Roadmap extends beyond DPI but is explicitly grounded in design principles that embody a DPI approach: interoperability, scalability, modularity, and agility, with decentralized delivery and privacy and security by design.

Key takeaway: Policies and visions alone do not create the practical alignment needed for progress. A roadmap can help establish alignment and drive implementation.

For these reasons, a DPI Roadmap can be a useful tool at all stages of a country's digital maturity. However, not all countries are ready for a roadmap process as it demands significant resources and commitment across different ministries. As an alternative, taking a practical, targeted use case-driven approach within the scope of one ministry or agency can build awareness and receptivity for the DPI approach, laying the groundwork for a more productive roadmap process in the future.

While a roadmap process can be a useful tool, historically it is not a prerequisite to starting a national DPI journey. For example, India never developed a national DPI Roadmap but rather embarked on its DPI journey to solve a problem. However, India developed a guiding philosophy that shaped both their DPI journey and their core DPI stack operating at a national scale today (see Country example 2). By contrast, South Africa drafted numerous digital policies and visions before deciding in 2024 to embark on a roadmap process (see Country example 3).

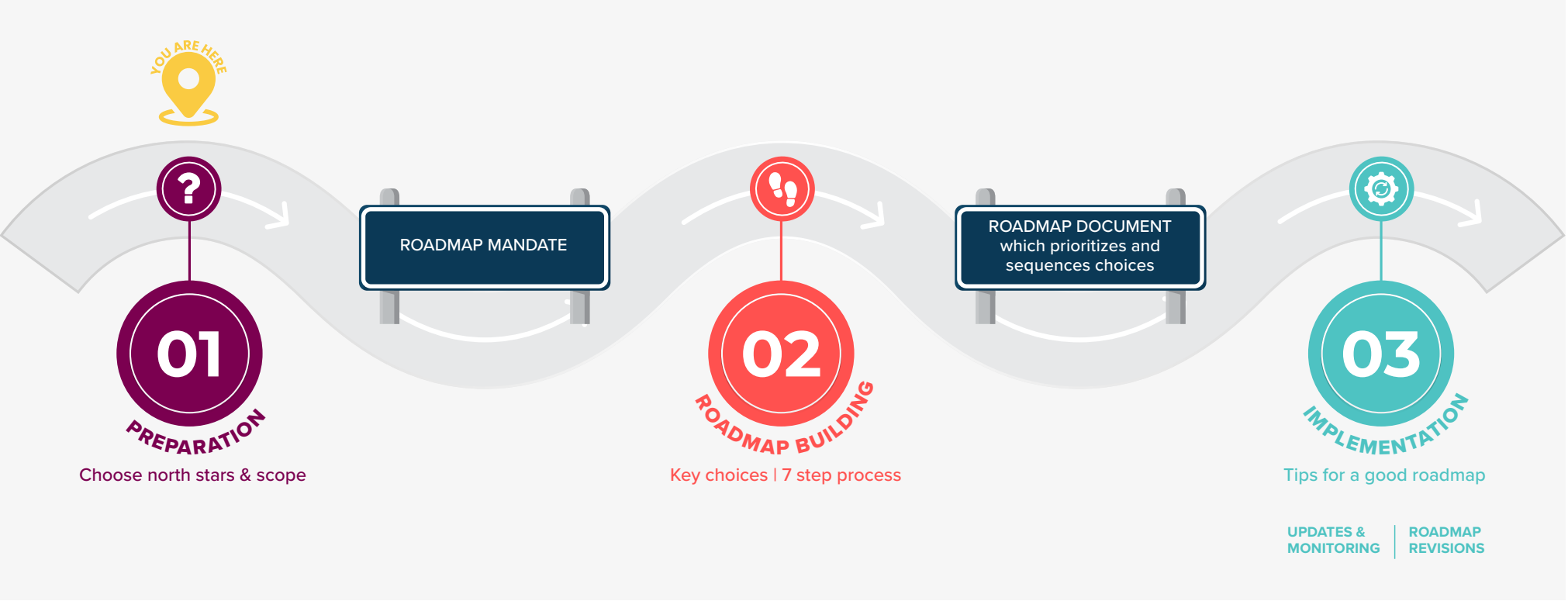
SECTION 2

WHAT ARE THE KEY CONSIDERATIONS IN PREPARING FOR A DPI JOURNEY?

PHASE 1: PREPARATION

Countries at different stages of digital development – from South Africa to the UK – have used roadmaps as a tool for digital transformation. However, not every country needs a DPI Roadmap or is ready to develop one. Before embarking on a DPI Roadmap process, senior policymakers need to address three foundational considerations:

- **Consideration 1:** What should be within the scope of a national DPI approach?
- **Consideration 2:** Is the country ready for a DPI Roadmap process?
- **Consideration 3:** What should the mandate for the DPI Roadmap process include?



CONSIDERATION 1:
WHAT SHOULD BE WITHIN THE SCOPE OF A NATIONAL DPI JOURNEY?

Defining the scope of a national DPI approach depends on two key choices: which national priorities it should address, and what level of engagement and participation is required to deliver results.

Most digital transformation policies aim to achieve one or more of five broad goals[3]:

- To improve public service delivery
- To promote fiscal resilience through cost savings
- To enhance digital inclusion and resilience in the society
- To catalyse economic growth through increased competition, digital innovation, and entrepreneurship
- To ensure national digital sovereignty

These goals are not mutually exclusive and should become mutually reinforcing over time. Many digital strategies include all of them in some form. However, the most dominant goal will shape both the process, as well as the actors involved. For example, catalysing digital economic growth requires deeper engagement with private sector players to understand their incentives and align them. By contrast, improving public service delivery falls more directly under the control of government agencies.

Pursuing a DPI approach to addressing one or more of these national goals requires a clear understanding of how DPI creates impact, enabling informed decision-making on which to target for maximum effectiveness (see Annex for more information). Deciding on the goals to focus on is akin to setting the destination. A DPI Roadmap charts the most feasible route to reach it. National priorities will shape the decision of where to begin. While DPI is ultimately an approach to digital transformation to create society-wide impact, a whole-of-government approach is often a necessary foundation. Although many governments articulate broad ambitions for whole-of-society digital transformation, their practical priorities often focus on cost savings and improved public service delivery. This is the case in the UK, as outlined in Country example 4.

[3] To understand how countries differ in their goals for DPI, read "Digital Public Infrastructure is the New Global Tech Bet—But everyone is betting on something different"- David Eaves and Beatriz Vasconcellos (2025)

COUNTRY EXAMPLE 4:
THE UK'S DIGITAL ROADMAP AND DIGITAL GOVERNMENT REVIEW

The UK government's Roadmap for Digital and Data (2022-2025) aims to implement a whole-of-government approach to improve public services. It set out a three-year framework of priorities and initiatives across multiple government agencies. The roadmap process was led by the Chair of the UK's Digital and Data Officer, based in the Cabinet Office which is the coordinating agency for the UK national government.

The process to draft the UK Roadmap for Digital and Data involved high-level participation from Permanent Secretaries of national government departments, who are also named as sponsors responsible for different 'missions' under the roadmap. The resulting document is short (15 pages) and presented in a plain format as an interactive web publication. It is structured around a set of key questions, such as *"Where are we today?"* and *"Where will we be by 2025?"* – making it easy to navigate.

An update to the Roadmap was published in 2023, a year after its issuance. In January 2025, the UK government published a State of Digital Government Review providing an independent review of its digital approaches, with an emphasis on learning lessons. This latest review followed an earlier 2021 review by the UK National Audit Office on the Challenges of Implementing Digital Change, which concluded that despite years of digital strategies and efforts, digital government initiatives often underperformed largely because they were not well thought through before technology solutions were decided.

Key takeaway: A good digital roadmap can help frame technology choices for better decision-making.

Building momentum first at a whole-of-government level is likely to spur greater consideration of how to address the wider goals for society. Indeed, that has been the progression for India that built momentum by first solving for key use cases, such as leakage in social transfer programmes that led to public revenue loss. Core DPI building blocks like digital identity also helped to unlock cost savings for private sector uses such as eKYC for account opening, starting a ripple effect of innovation now sweeping across various sectors of the economy, from education to agriculture.[4]

A whole-of-government DPI approach should result in more people and organisations being digitally included and generating more useful data. For example, a robust digital identity system enables authentication for – and access to – a wide range of online services; or an instant payment system used by people who previously relied on cash helps them to build digital footprints, which may unlock other financial products. Even when initially focused on government use cases, a DPI approach will have significant implications for how data is generated and used in the broader ecosystem, which includes substantial private-sector data flows. How to govern this larger data ecosystem is a complex and important question shaped by considerations that extend well beyond DPI alone.

A final consideration on scope relates to the cross-border context of a country. International standards, laws, protocols, and technology approaches significantly influence the design of DPI. The G20 developed a Cross-Border Payments Roadmap to align a complex menu of concerted actions by multiple countries and international bodies over time to achieve goals, which were articulated as part of the process (see Example 5). But just as international frameworks affect the choices available in national strategies and roadmaps, national roadmaps can also accelerate the pace of implementation of international frameworks. Cross border protocols may gain little traction unless there are also aligned national roadmaps in place to implement them. The recent adoption of the AfCFTA's Protocol on Digital Trade is one example where the implementation of an international framework will be reinforced by national processes, including a DPI Roadmap.

[4] "India's DPI: Accelerating India's Digital Inclusion" describes the wide ranging landscape of DPI building blocks applied across multiple sectors including logistics, health, education and agriculture in India today – Nasscom and AD Little (2024)

EXAMPLE 5:

G20 CROSS-BORDER PAYMENTS ROADMAP

The G20 Cross-Border Payments Roadmap was initiated to address systemic challenges in international payments, including high costs, inefficiency, and limited access. In 2019, the G20 mandated the Financial Stability Board (FSB), in partnership with the Committee on Payments and Market Infrastructures (CPMI), to assess the barriers and propose reforms. Following the publication of a diagnostic report in April 2020, the FSB conducted extensive consultations with public authorities, industry participants, and international organizations.

The finalized Roadmap, endorsed by G20 Leaders at the Riyadh Summit in October 2020, outlines work needed across five focus areas: improving regulatory frameworks, enhancing payment infrastructures, standardizing data practices, promoting market efficiency, and exploring innovative payment models. Implementation responsibilities were allocated between public authorities and private sector actors, with coordination led by the FSB, CPMI, and other standard-setting bodies through the Cross-Border Payments Coordination Group.

While the Roadmap is non-binding, it is reinforced by political commitment, reputational incentives, and a structured annual monitoring process. In 2021, the G20 adopted specific quantitative targets for 2027 related to cost reduction, speed, accessibility, and transparency to further focus implementation efforts. As of 2025, substantial progress has been made in areas such as adoption of the ISO 20022 global standard and piloting of cross-border payment systems. However, the FSB has emphasized that achieving the full 2027 targets will require accelerated action, particularly to lower costs and broaden inclusion across developing economies.

Key takeaway: A roadmap can be used to galvanise attention to address complex cross-jurisdictional issues over time, but needs a capacitated secretariat to keep up momentum on execution.

While countries must choose the goals and scope, the underlying core principles of a DPI approach are not negotiable. Without these principles, a digital transformation journey would not be a DPI journey. However, the core principles need to be interpreted and applied in practice in a national context – as an example, there is a spectrum of possibilities as to how federated and decentralized (principle 4) it is possible and desirable to be.

WHY THESE PRINCIPLES MATTER

01. INTEROPERABILITY	02. MINIMALIST, REUSABLE BUILDING BLOCKS	03. DIVERSE, INCLUSIVE INNOVATION	04. FEDERATED & DECENTRALIZED	05. SECURITY & PRIVACY
› **Choice** of solutions and services for individuals › **Scale** of access and adoption for individuals › **Competition** in markets while remaining interoperable	› **Feasibility & Success** of digital intervention › **Privacy** protection based on minimalism › **Combinatorial innovation** by market › **User-centric** solutions › Financial **sustainability** (lower cost of the DPI) › **Evolvability** & Extensibility	› **Inclusion** › **Scale** › User **Choice** › **Resilience** because of diverse providers › **User-centric** solutions	› **Autonomy** of Institutions & players › **Fewer Intermediaries;** more peer to peer transactions › **Cybersecurity Privace Resilience** - avoid overdependence on any one system	› **Public Trust** in the Infrastructure › **Protection** of individuals from harmful actors

Source: CDPI DPI Wiki

Applying the principles of a DPI approach in practice surfaces trade-offs. Part of the role of a DPI Roadmap process is to understand and explore these trade-offs, and helping to navigate the difficult choices they may involve. Being aware of possible tradeoffs, like the examples shown below, ensures that there are fewer surprises during the DPI Roadmap process.

Potential tradeoff	How it effects the DPI journey
Openness vs privacy	If digital systems are too open, they may expose sensitive citizen data, increasing the risk of cyber threats or misuse. However, if too private or restrictive, they may limit collaboration, innovation, and economic benefits from data-driven services.
Efficiency vs accountability	Automating processes may save time, leading to greater efficiency; but over-reliance on automation without checks and balances may reduce accountability. However, too many ineffective accountability mechanisms, such as manual reviews and audits, can slow down service delivery and reduce efficiency.
Centralized vs decentralized	A highly centralised digital system (e.g., national ID database) could become a single point of failure or target for cyberattacks. However, highly decentralised architectures can be harder to regulate and oversee, leading to interoperability issues and fragmented governance.
Open-source vs proprietary solutions	Using open-source software may reduce licensing costs and offer more control over digital systems, but they require sustainable models for updates and maintenance. Using proprietary systems may lead to dependence on a few vendors, limiting flexibility and control over national digital infrastructure.

CONSIDERATION 2:
IS THE COUNTRY READY FOR A DPI ROADMAP PROCESS?

There is little point in spending the time, energy, and resources needed for a DPI Roadmap if there is insufficient government alignment or broader societal support for the outcome.

Test your readiness for a roadmap process by asking four key questions.

Readiness factor	Considerations
Are there existing national roadmaps, visions, or plans that require updating or revision?	Many countries have these in some form. The key question is what they cover, and whether they are clear, current, and relevant to the present context. *If these existing documents are adequate, then a DPI Roadmap may not be needed.*
Is there a sufficient understanding of and openness to a DPI approach?	Levels of understanding about a DPI approach will vary. At least one senior policymaker with authority over a country's digital agenda should understand how DPI connects to national priorities and be open to the journey. *If not, a process of building awareness and understanding may be needed first.*
Is there a government agency with the authority to convene or endorse a roadmap process?	A whole-of-government approach requires a government agency with a mandate to at least convene other departments and agencies. *If not, the process is unlikely to have the breadth of support needed, and it may be better to start with a single DPI use case or building block within one department (as in the +1 DPI approach).*
Is there sufficient time to do this, and does the agency have the technical and financial resources needed?	Good roadmaps take time and resources. Some resources can be outsourced, but this will require budget. Section 3 outlines what may be needed. *If time or resources are limited, it may be better to begin with capacity building and fundraising.*

If the answer to most or all these questions is "yes," then there may be readiness to begin a DPI Roadmap process. In general, strong endorsement from a government agency with a mandate over digital affairs is essential.

However, if this capacity is lacking, it is possible to secure technical support from private consultancies or international agencies (see Annex). While external partners can assist, a government agency with the appropriate authority must remain actively involved and preferably lead the process.

Even if most responses are "no," progress can still be made. For example, momentum can be created by demonstrating progress on a narrower front, starting with building, improving, or extending a DPI building block in a narrow use case – as proposed in the "+1" approach advocated by Pramod Varma, the chief architect of India's DPI journey. This approach begins by asking: *How can a DPI approach be applied to solve a specific challenge within the current mandate?* The answer will vary depending on the agency asking the question.[5]

In practice, deciding on readiness for a DPI Roadmap is often an iterative process, cycling between the level of ambition and the resources needed to deliver on it. For example, even if a government digital agency is available to lead the process, it may still lack clarity on how DPI aligns with national priorities or what resources are required. There may be a need first for further engagement to clarify and build sufficient understanding.

[5] CDPI has a list of suggestions of where to start for a range of different agencies, from central banks to identity authorities.

CONSIDERATION 3:
WHAT SHOULD THE MANDATE FOR THE DPI PROCESS COVER?

A clear mandate for a DPI Roadmap ensures the process is rightsized, meaning that the efforts are proportionate to the scale of the objectives and the risks involved. This requires a set of important choices about the DPI Roadmap process. These include how much time is available, who should lead the process, who must be consulted, and what resources are necessary and available to support it.

One way to create clarity around these choices is to draft a mandate, or terms of reference, for the DPI Roadmap process. This may be as simple as a letter addressed to the agency or unit charged with leading the process. The mandate needs to come from a senior policymaker at an agency with sufficient authority to convene and influence all the parties affected by the scope of the Roadmap. While it need not be long, the mandate should provide clarity on most, if not all, of these elements.

A DPI ROADMAP MANDATE SHOULD SPECIFY:

1 The **larger societal objectives** to be achieved i.e., what are the real priorities?

Example: "The most important objective is to reduce the cost of providing basic government services and the frictions of interacting with government agencies."

2 The **timeframe** within which the roadmap must be completed, i.e., how must this process fit into a cycle of decision-making or budgeting

Example: "The DPI Roadmap must be completed within 6 months of the date of this letter in order to be considered in the national budgeting process."

3 The **governance of the Roadmap process**, i.e., who makes decisions during the process. The mandate may nominate a steering group under a chair or convenor.

Example: "A steering committee convened by person X comprising senior officials from these agencies shall be responsible for overseeing the roadmap process."

4 The **extra resources** to be provided to the process, if any. For example, is the mandating authority also providing staff to manage or participate in the process on a part-time or full-time basis?

Example: "The secretariat for the process will be provided by this agency. They have budget of up to $X to hire supplementary technical resources to support the process as part of their current year budget."

5 The **basis for reporting back** to the mandating authority during the process. For example, will updates be provided at fixed intervals, such as monthly, or at key milestones?

Example: "The Steering Committee shall provide updates on their progress to the Ministerial Digital Transformation Committee on a bi-monthly basis."

6 Who will ultimately approve the Roadmap? Will it be a Minister, a Ministerial Committee, or the full Cabinet?

Example: "The DPI Roadmap will be reviewed by the Ministerial Digital Committee and recommended to the Cabinet for approval."

7 Any **specific instructions** for the engagement process i.e. any stakeholders who must be consulted?

Example: "The Secretariat shall ensure that consultation takes place with all affected government ministries and shall engage, at a minimum, the following bodies representing the voice of civil society …."

8 Any **risks or political sensitivities** to highlight? Especially if they would not be known or obvious to the team?

Example: "The Trade Ministry is currently reviewing accession to a cross border digital trade protocol. The implications of this decision need to be factored into the DPI Roadmap."

SECTION 3

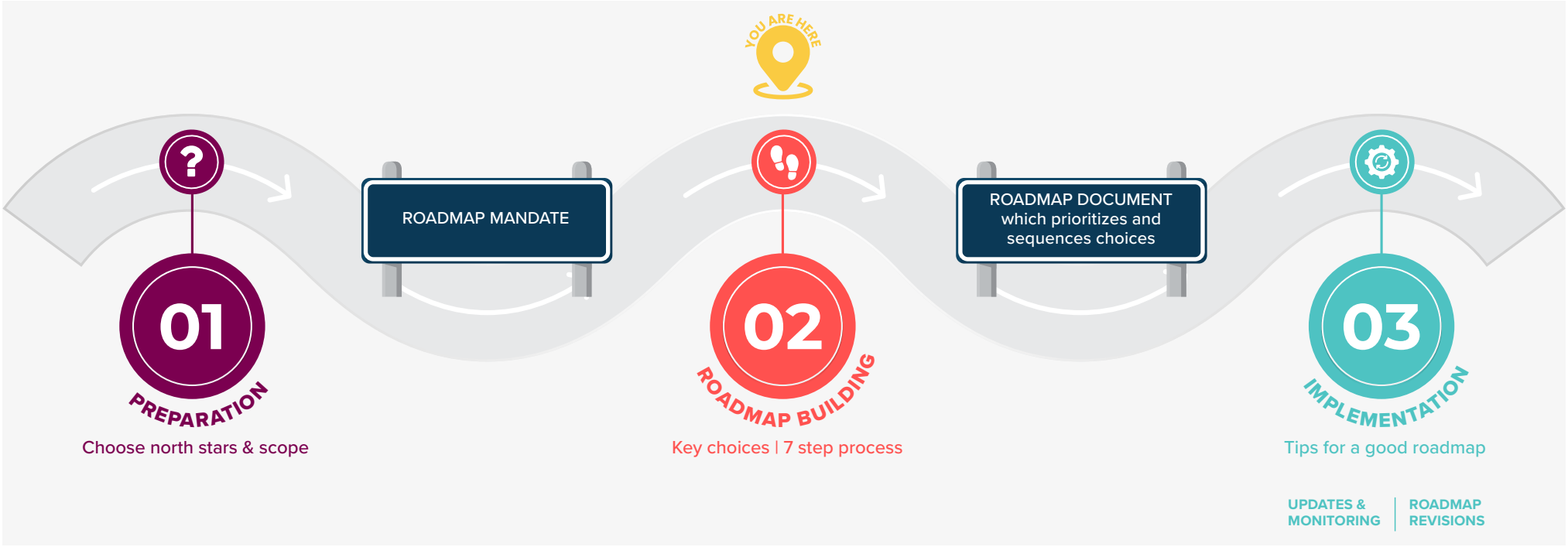
WHAT ARE THE ESSENTIAL STEPS TO DEVELOP A DPI ROADMAP?

C.

PHASE 2: ROADMAP BUILDING

After the first-order considerations of priorities and scope have been identified and the need for a clear mandate is well-understood, the DPI Roadmap process can be achieved in three parts:

1. Understanding the choices to be made: **What needs to be decided?**
2. Following the steps: **How to build a DPI Roadmap?**
3. Checking the content: **What is in a good DPI Roadmap?**



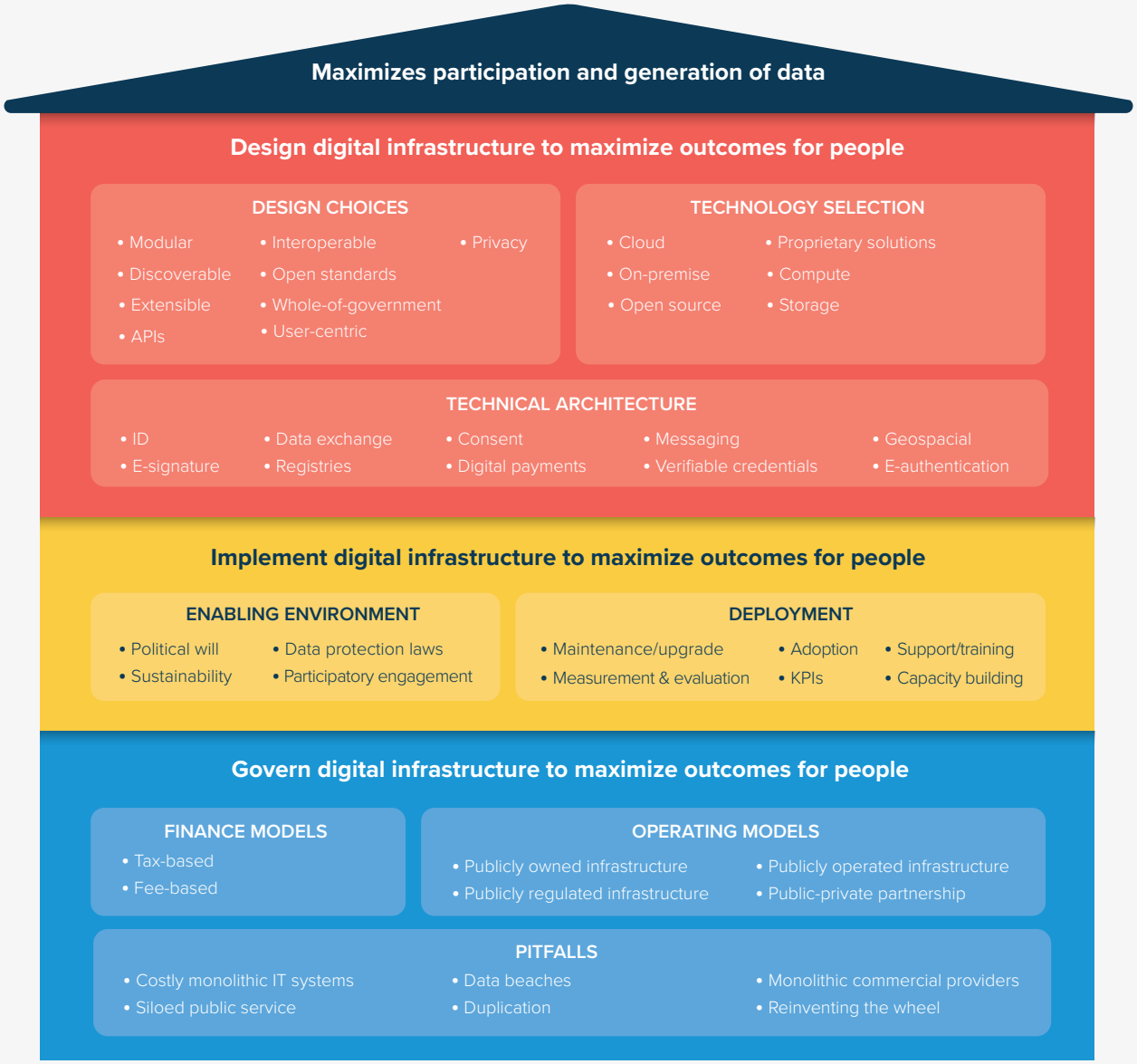
1. UNDERSTANDING THE CHOICES: WHAT NEEDS TO BE DECIDED?

National priorities create a foundation on which to consider the next layers of more specific choices related to design, implementation, and governance – as shown in the levels of the 'DPI House'. Not all these choices need to be resolved in a DPI Roadmap, although a good roadmap should provide clarity on the principles that will guide future choices.

The core team responsible for the DPI Roadmap needs to be informed about the landscape of choices. One way is to have the team review and discuss recent, credible resources, such as those listed in the Annex. Well organised and guided study tours can also help build shared knowledge and alignment across institutions. While it is important for the DPI Roadmap core team to understand the main components of the 'DPI House', they may need to draw on experts and key partners who can act as 'sherpas' to help navigate its complexity.

On the design floor, the choices extend to technology selection (for example, whether to use cloud-based or on-premises data infrastructure) and technical architecture (for example, which building block systems to focus on). These choices will also be informed by the use cases prioritised. While a DPI Roadmap should not address implementation details (as these will follow in implementation plans for specific building blocks), it must still show that the preferred route is feasible. This means considering the enabling environment, including governance and oversight, around the initiatives.

KEY CHOICES IN BUILDING THE "DPI HOUSE"



Source: Digital Impact Alliance (DIAL)

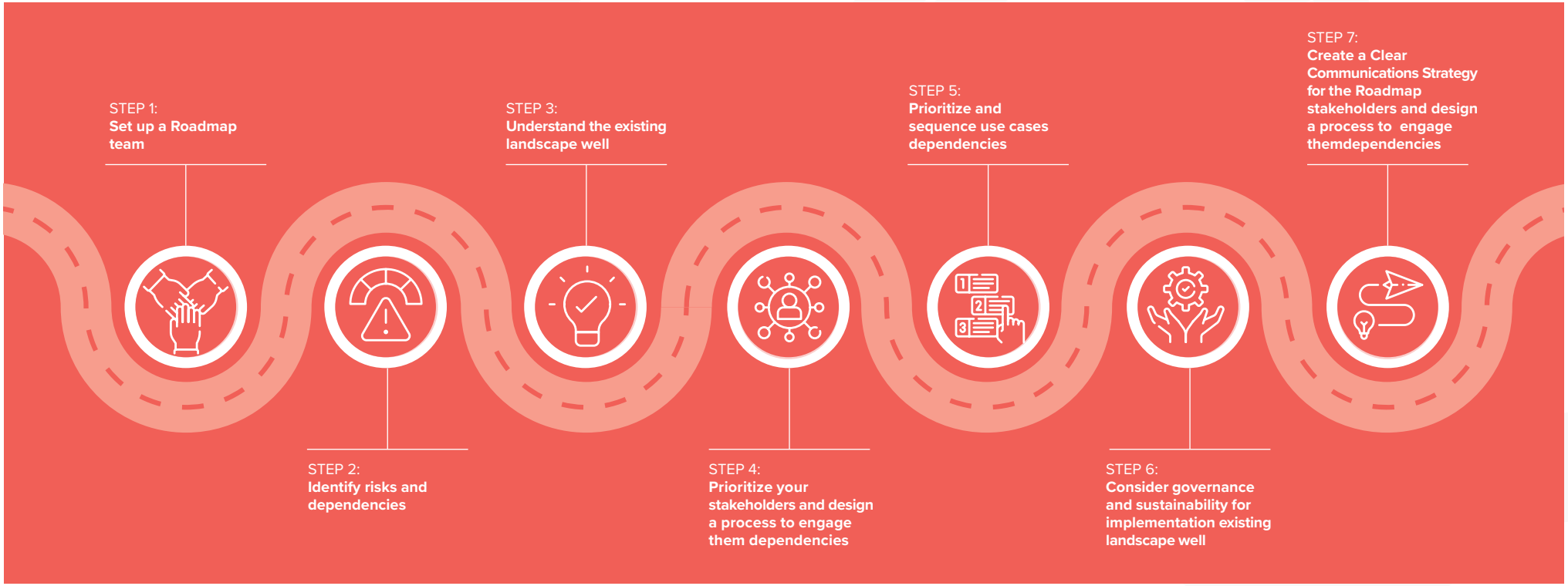
Key takeaway: Lean on your network for guidance and insights drawn from their experience. This can include reading credible resources, organising study tours, or holding direct consultations.

2. FOLLOWING THE STEPS: HOW TO BUILD A DPI ROADMAP?

There are seven steps to building a DPI Roadmap. Not all steps are strictly sequential; some can be undertaken in parallel. For each step, this Playbook provides insights from the South African Roadmap process as a practical illustration of how it was addressed in that context.

Common pitfall: A roadmap can get caught up in theory, when it should be grounded in reality. Ensuring the path set out by the roadmap is feasible will require a firm understanding of choices, trade-offs, and the enabling environment.

7 STEPS



STEP 1:
SET UP A DPI ROADMAP TEAM

A good DPI Roadmap is resource-intensive, so it is important to establish a core team with the necessary skills and resources.

The mandate should identify at least the person responsible for convening the DPI Roadmap steering group. That person may also serve as the team leader. If not, they should ensure that a suitable team leader is appointed with the authority to make decisions during the process. The team leader will need the support of a core team, which should include at least the following roles:

- A **team leader**, with the authority and experience to convene and manage a multistakeholder process. The team leader does not need technical DPI expertise but must be able to draw on it, when required. This role may not be full-time, but the leader should be constantly accessible during the DPI Roadmap process.
- A **project manager**, who can procure and supervise technical resources, arrange convenings and oversee workstreams. This role is likely to be full-time depending on the scale of the process.
- **Technical leads**, who may be appointed to oversee work in particular areas of activity. For example, it may be useful to have experts focused on the core DPI building blocks, such as payments, identity, and data exchange, as well as those familiar with current technical capabilities within government.

The DPI Roadmap team may comprise a mix of government officials and advisors. This team is not necessarily the same group that will be responsible for implementing the DPI Roadmap, although some overlap is highly desirable.

COUNTRY EXAMPLE 6A:
SOUTH AFRICA – DESIGNING A CORE ROADMAP TEAM

Two Directors in the Office of the President were actively involved in leading the Roadmap process, which required on average a third of their time. Importantly, they had experience managing other complex multistakeholder processes through Operation Vulindlela, an initiative aimed at implementing priority reforms in key sectors.

The platform of Project Vulindela gave the core team the authority and convening power to engage other government departments and set up an Inter-Departmental Working Group. The process was overseen by a steering committee comprising the top civil servants (Directors General) in the three most engaged departments: the Presidency, the Department of Digital Communications and Technology, and the National Treasury. They were supported by a consulting team from a private consultancy, funded through a project known as Digital Innovation in the Public Sector, which was originally intended to support data-sharing use cases within the South African government. The consulting team contracted technical leads with expertise in key areas of interest, including digital payments, social grants, and digital identity.

Key takeaway: Officials from an appropriate state agency should provide leadership – external resources can supplement and support them.

Key output: At the end of this step, the core team should be in place, with the appropriate roles and corresponding levels of availability.

STEP 2:
IDENTIFY RISKS AND DEPENDENCIES

The DPI Roadmap process identifies internal and external risks and aims to manage them.

Internal risks are those that impair the efficiency and effectiveness of the process. These include risks such as setting a scope that is too ambitious or not ambitious enough, or failing to galvanise a coalition for change, which can result in wasted time and effort. To manage these risks, it is important for the core team to frame the DPI Roadmap process as a change management exercise that considers not only the technological context but also the political landscape, particularly the potential for misaligned incentives within and across government agencies. Within the core team, the leader (at a minimum) should closely monitor the political environment. At the same time, the whole team should scan the environment of affected agencies and groups to identify potential champions of change, as well as potential detractors and adopt different strategies to engage people in each group.

External risks are those outside the control of the DPI Roadmap process. One risk category arises from the deployment of DPI creating new digital capabilities for governments. Without adequate safeguards and countervailing measures, this could increase the potential for abuse, particularly around data privacy. The UN's Universal DPI Safeguards Framework has catalogued a list of risks relating to DPI and proposed a framework for how to mitigate them.[6] By acknowledging this category of DPI risks, the core team can ensure that solutions and responses are 'baked' into the process by design, rather than considered retrospectively when it may be too late to take them seriously.

Another category of external risks stems from the fast-changing international technology environment. Examples include cyberthreats or legal changes affecting cross-border data transfer, especially in a regional context. How these factors influence possible DPI Roadmap paths will need careful consideration. One way to make the DPI Roadmap more robust in the face of uncertainty and complexity is to build scenarios that reflect the possible environments in which it may need to be implemented.

COUNTRY EXAMPLE 6B:
SOUTH AFRICA - CONSIDERING RISKS USING SCENARIOS

As part of South Africa's Roadmap process, the Inter-Departmental Working Group commissioned a set of scenarios to test the impact of external factors on the environments in which the Roadmap would unfold between 2025 and 2030. The scenarios were developed within two months by an external think tank (see the Annex). DPI-specific scenarios may be built into broader national scenario sets to highlight unintended or less understood consequences of change.

South Africa has a long history of using scenario-building to motivate societal change, dating back to the transition from apartheid. These scenarios are typically structured as vivid and plausible narratives that illustrate the implications of different choices. Scenario-building can therefore be used as part of a wider change management strategy to engage stakeholders in building these stories for themselves – especially in an environment of high complexity.

Key takeaway: There are creative ways to spur consideration of risks and identify needed safeguards throughout the process.

Key output: By the end of this step, there should be a prioritised list of likely risks, along with approaches to understand and mitigate them during the process.

[6] The UN Safeguards website provides process recommendations and illustrated approaches in response to each risk identified.

STEP 3:
UNDERSTAND THE EXISTING LANDSCAPE WELL

Since DPI is never implemented in a vacuum, understanding the existing policy and regulatory context is crucial.

Few countries begin – and undertake – their digital transformation journeys in a near-greenfield environment like Estonia did in the early 2000s. Most operate within a complex web of legacy technologies, institutional arrangements, and existing policies. A common challenge when deploying national data-sharing platforms is the prevalence of legacy systems and entrenched bilateral data-sharing agreements between government agencies.

Developing a comprehensive inventory of existing software assets across government entities is an important step within a DPI Roadmap. This could be in the form of a static, web-based catalog or a more dynamic, interactive approach, such as deploying an instance of the open-source Digital Impact Exchange. Having a clear view of existing software and associated deployments will enable countries to identify reusable components, reduce duplication, and integrate legacy systems more cost-effectively into DPI and enterprise architecture.

Another component of this step is taking stock of laws and regulations that are applicable to digital service delivery, data protection, and institutional responsibilities over digital domains. For example, digital payment systems are regulated by central banks. Understanding the web of laws, policies, and regulations will illuminate what is feasible in the current landscape; what reforms are most needed; and how best to prioritize and sequence reforms. For instance, questions may arise such as: *Are comprehensive data protection laws a prerequisite for investments in data-sharing systems? Can the creation of an effective data protection authority be done effectively in the absence of data protection laws?* While there is no one-size-fits-all answer to these decisions, a DPI Roadmap can prioritise areas where existing policies, regulations, or institutional norms, often from specific sectors like financial or health, offer a feasible starting point while providing directional signals for longer-term changes. Many DPI initiatives may be designed to work within existing legal frameworks, avoiding the lengthy delays that legislative reform often requires. Rather than overhauling entire regulatory structures, governments can focus on leveraging policy interpretations, executive decisions, and regulatory sandboxes to enable rapid and iterative deployments of digital solutions.

COUNTRY EXAMPLE 6C:
SOUTH AFRICA – BUILDING A VIEW OF WHAT IS NEEDED

South Africa's core Roadmap team undertook a comprehensive landscaping exercise before the start of the formal Roadmap process. The team held numerous bilateral and group meetings to understand the landscape and identify stakeholders at both institutional and individual levels.

The findings were consolidated into a presentation deck, forming part of a consultation process that helped build a shared view of the current landscape – especially of the extent of duplication and fragmentation of digital initiatives. This exercise informed the prioritisation of subsequent efforts.

Key takeaway: Comprehensive landscaping is necessary but takes time.

Key output: After this step, there should be a landscape analysis that outlines the starting point of laws, policies, and major systems, as well as identifying the main stakeholders.

STEP 4:
PRIORITIZE YOUR STAKEHOLDERS AND DESIGN A PROCESS TO ENGAGE THEM

A good DPI Roadmap results from a well-managed process in which key important stakeholders – those who likely can affect or who are affected by the outcomes – are all engaged at some level.

The number and type of stakeholders in a DPI Roadmap process depends on the agreed scope (at the preparation stage). The landscaping exercise undertaken (at Step 3) should help to identify which entities, and even which individuals, need to be engaged at some level during the process.

The level of engagement possible will depend on the resources and time available to the core team, recognising an inherent tension to manage. On the one hand, the goal of participation suggests casting a broad net to maximize representation. On the other hand, the ability to create a multistakeholder group that is focused enough to identify shared goals and drive meaningful action suggests a more strategic approach to stakeholder engagement.[7]

The core team will need to activate a variety of channels for effective stakeholder engagement. Informal relationship channels may help with reaching out to key individual stakeholders. However, the core team must also design appropriate formal mechanisms for co-creation, discussion, and consultation. Prioritised entities identified through the landscaping exercise may be invited to nominate representatives with the appropriate seniority, expertise, and availability to a working group. The core team should convene this working group periodically at key moments during the roadmap process. This group also requires a clear mandate for its discussions to align expectations about what it can and cannot address. Since a group formed from across government may well be quite large, the core team may need to establish specific thematic subgroups around DPI building blocks. These thematic subgroups may even evolve into required cross-functional teams (at the implementation stage).

In general, starting with more modest goals around size and diversity of stakeholder groups can help build momentum and demonstrate success. A roadmap process may also help to create enduring consultation mechanisms through which more stakeholders can become involved over time. The goal need not be to repeatedly convene large groups representing broad cross-sections of society. Rather, the goal for engaging with external stakeholders could be to shift the nature of who engages in and shapes digital policy issues. Ultimately, intentionally bringing new and diverse perspectives into a DPI Roadmap process is critical to long-term implementation success.

The process of engaging stakeholders to secure support and buy-in is distinct from the process of gleaning technical expertise for review and guidance. For that, the core team may consider setting up advisory groups with selected independent advisors. Any such advisory group would also require a clear mandate to avoid misunderstandings.

[7] With these challenges of scope and pace of change in mind, the World Bank's 2021 World Development Report – which focused on the role of data in driving development outcomes – highlighted the importance of multistakeholder approaches to governance in a digitizing world. The report notes that established notions of governance based upon national sovereignty and traditional economic sectors do not account for the complexities of the data economy.

COUNTRY EXAMPLE 6D:
SOUTH AFRICA - BRINGING IN DIVERSE VOICES

During the Roadmap process, the core team commissioned end-user research to validate the baseline experience of citizens with the government services emerging as priority areas through the IDWG process.

During a one-month period in late 2024, a market research group convened a series of focus group discussions with key citizen profiles to understand their concerns and experiences. This included grant recipients, youth, women, and small and micro business owners. This research brought the voice of people in South Africa to the design process and helped ground the Roadmap in their lived experiences. It also helped to develop the persona of a young woman – named Thandi in the Roadmap – to provide a more people-centered lens to show how the changes proposed in the Roadmap would result in positive changes in her life. In the Roadmap, Thandi's journey is tracked from her current state to how her life improves in the future.

Key takeaway: Formal engagement channels are needed but should be supplemented with technical advisory groups and market research.

Key output: After this step, there should be a list of priority stakeholders and a plan to engage them within your timeframe and capacity.

STEP 5:
PRIORITIZE AND SEQUENCE USE CASES

At the heart of the DPI Roadmap process is the choice and sequencing of key use cases.

The selection of initial use cases will depend on careful consideration around feasibility and potential, among other factors. A scorecard, like the one shown below, highlights common criteria that may be weighted differently in different settings.[8]

Example of a use case description	
What is the use case?	Land Ownership Certificate
Who is served by this?	Rural populations
DPI building block	Verifiable credentials (data exchange)
Services unlocked	Access to loans, benefits, land use rights, digital property transfer, climate carbon credits, etc.
Evaluation:	
1. Alignment: To what extent does this use case align with the overall mandate for digital transformation?	This use case is aligned with the strategy of transforming how the government operates, reducing bureaucracy, and putting the user at the center. The land ownership certificate would simplify access to their property titles and facilitate their access to credit from the financial sector or benefits based on land use.
2. Impact: If successful, how many people will be affected? What are the realistic benefits for: a. Citizens b. Government departments delivering it?	Total number of verifiable credentials to be issued: 10 million land ownership certificates. The application and issuance process for certificates is reduced from 200 days to 0. This represents savings of $<< insert amount>> million for the government. We estimate that with the verifiable credential, 70% of landowners will have access to their property titles for the first time, while 40% of landowners will be able to access credit in the country's financial sector.
3. Feasibility: To what extent can this use case be delivered without dependencies on other systems that need to be changed first? This may include consideration of rapid approaches to deliver.	This building block (verifiable credential) integrates with existing rural registry systems to issue certificates without the need to develop new business applications. It integrates the new building block with the existing credential holder (the government-managed digital wallet), utilizing the country's digital identity infrastructure. The acceptance of the verifiable credential by various organizations and the private sector requires a minimum regulatory framework for legal validity, as well as integration of verification APIs with accepting parties.
4. Risks: What are the possible downside consequences of making this change directly, and indirectly through other systems?	The biggest risk is developing the technology without assessing the full impact (end-to-end) of the use case. Coordination with the organisations that will accept verifiable credentials and provide access to services or benefits is key. There is no point in developing this if the user can't access what they want or need.

[8] Other examples of potential use cases can be found via Govstack's Reference Use Cases or The DPI Wiki.

In selecting use cases, the core team will look for catalytic leverage points where changes will likely generate further change. A DPI Roadmap is, in many ways, a sequenced portfolio of priority use cases. Since the portfolio will likely need to be adjusted over time, roadmaps that disclose their prioritisation criteria will facilitate the inclusion of other use cases in the future.

The process of deciding on priority use cases is likely to be iterative. While the core team may start out the process with some hypotheses, these will likely be refined or discarded during the DPI Roadmap process once feasibility comes into sharper focus. For example, a common starting place for DPI use cases in India and South Africa are social protection programs. This is because such programs are large in these countries, affecting many citizens and requiring substantial resources to operate. A DPI approach can provide efficiencies to help offset these high costs. A table, like the one above, can be used to collect information on potential use cases and help prioritise them.

When assessing feasibility, considering the sequencing of use cases should be top of mind. Even if a use case is identified as a priority, it may depend on other factors that need to first happen. As a result, a priority use case may need to be sequenced later, in favour of starting sooner with a lower priority case with fewer dependencies.

Legacy IT systems often constrain the scope for change. One way to navigate this is to pilot use cases which are amenable to modular, reusable, and open-source solutions. In general, pilots and modular deployments allow countries to test, iterate, and refine approaches, ensuring scalability and sustainability while demonstrating tangible benefits to citizens and businesses. By starting with high-impact, low-effort interventions, such as verifiable credentials, eKYC frameworks, or targeted government-to-person (G2P) payments, countries can drive early adoption, attract investment, and lay the foundation for larger-scale DPI implementations in time.

Offering DPI as a Packaged Solution (DaaS) is one approach that enables governments to roll out scalable and adaptable DPI components efficiently, without first having to develop their own deployment infrastructure or having to select vendors to develop bespoke solutions. DaaS will still require local systems integrators to modify and deploy the solutions; but the typical development cycle may be reduced from years to months as a result.[9]

Key takeaway: Prioritizing use cases should consider pain points for the government, as well as citizens.

Key output: After this step, there should be a ranked list of priority use cases with a sense of their interdependencies and feasibility.

COUNTRY EXAMPLE 6E: SOUTH AFRICA – CHOOSING USE CASES

South Africa's roadmap process prioritized four high-level initiatives built around use cases. For each, the Roadmap assigns a lead department and defines a set of success indicators over the two phases of the Roadmap, namely after two years, and again after the following three years, for a total of five years.

The initiatives prioritised revolve around one of the country's major social assistance programs, the Social Relief of Distress (SRD) grant. SRD was designed and implemented quickly during COVID-19 to provide a temporary cash cushion for unemployed individuals without a major alternative source of income. However, it has endured well beyond the pandemic. In 2023, around 8 million applications were approved, with a budgeted annual payout of around $2bn, or 15% of total social assistance payments. The scheme has faced allegations of eligibility fraud and challenges in ensuring beneficiary access.A DPI approach that upgrades digital identity for beneficiary verification, enables data exchange to improve means testing, and consolidates payment approaches for government payments, offers the prospect of relieving major pain points both for beneficiaries and government agencies experience in the payment of social programs like SRD.

[9] Pramod Varma and other experienced DPI practitioners put forward the case for DaaS in 2024 Carnegie paper "The Future of Digital Public Infrastructure: A Thesis for Rapid Global Adoption".

STEP 6:

CONSIDER GOVERNANCE AND SUSTAINABILITY FOR IMPLEMENTATION

A country will need an ongoing governance structure for its DPI journey as it moves from the roadmap stage to the implementation stage.

Just as the DPI Roadmap process itself requires a steering structure, the roadmap will have to consider and propose how to take forward the process of coordination and oversight during implementation. This requires a governance structure that has the power and agility to adjust, as needed. This is not only because barriers will arise that may lead to re-prioritisation, but also because the inherent tradeoffs, such as between the openness vs security of a digital system, which will likely require regular adjustment. During implementation there should be opportunities for continuous improvements based on regular learning. Similarly, further innovations may become available over the course of the implementation, which could accelerate or modify the route.

At the operational level, it is important to identify what resources are necessary to monitor and report on DPI Roadmap implementation and where these will come from. For example, it may be necessary to establish a new unit with this focus if a suitable digital government agency does not yet exist, as in the case of South Africa. The DPI Roadmap should state the frequency of reporting to set expectations and create accountability. With sufficient resourcing, monitoring, and learning from implementation, this process can create a powerful body of evidence on the impact of specific practices and elements of digital transformation. This may support feedback loops for subsequent policy debates and inform roadmap updates where needed.

COUNTRY EXAMPLE 6F:

SOUTH AFRICA – ESTABLISHING NEW OVERSIGHT AND EXECUTION CAPACITY FOR IMPLEMENTATION

South Africa's Roadmap envisages a two-level structure for implementation. At the senior oversight level, an IDWG has been created, comprising ten ministers. A Secretariat will continue to convene the IDWG set up during the Roadmap process to monitor and encourage interdepartmental communication and drive implementation of the roadmap.

At the operational level, the Roadmap envisages the creation of a focused Digital Services Unit in the Office of the President. Staffed by a small but expert team, this unit will lead the implementation of specific initiatives and support and monitor line departments that will take the lead on others.

Key takeaway: A roadmap should look ahead to the structures needed to coordinate and guide its implementation.

Key output: After this step, there should be a clear sketch of the supervisory and operational structure for the implementation stage, along with details on how they will be funded and supported.

STEP 7:
CREATE A CLEAR COMMUNICATIONS STRATEGY

A DPI Roadmap is a common script of aligned intentions to act across government departments; but merely having a script does not communicate the message to the target audiences.

An important aspect of a roadmap process is to consider how the final DPI Roadmap will be communicated, both within government and to the public. To produce a public-ready version, the core team will benefit from drawing on communications expertise to simplify technical language and sharpen messaging. This may include the use of citizen personas, visual aids, and clear narrative framing. If the target audience includes the general public, you should allow ample time and resources to create targeted collateral and ensure wider dissemination.

Effective roadmaps are concise but often rely on annexes for additional supporting material for specific audiences.

The communication needs for launching a DPI Roadmap can be considered in two phases:

Immediate communication of a new DPI Roadmap: This may include an initial public consultation phase during which comments and feedback are solicited and considered. This stage could also include tactics such as:

- Outreach to influential journalists and media prior to publication of the DPI Roadmap giving them background and perspective.
- Convening targeted fora with selected stakeholders to build awareness and foster dialogue.

Ongoing communication: The implementation of a DPI Roadmap will also require continued communication efforts to help build and maintain momentum around its initiatives. The details of these efforts are likely to be outside the scope of the DPI Roadmap itself. However, the DPI Roadmap may provide for the role of a Chief Communications Officer within the implementation team to lead such efforts.

COUNTRY EXAMPLE 6G:
SOUTH AFRICA – COMMUNICATION STRATEGY FOR THE ROADMAP

The South African Roadmap process included the creation of a communications strategy to promote the Roadmap within government and across the broader society. At the heart of this strategy is the creation of a new brand 'Digital Mzansi' (a colloquial term which means 'digital South Africa') to signal the new approach. Digital Mzansi has a website (https://www.mymzansi.org.za) that contains the Roadmap and supporting materials. The Digital Mzansi Stakeholder Steerco was created to be a communications-focused counterpart to the IDWG, which would be chaired by a senior individual from the private sector.

Digital Mzansi is guided by a strategy that includes:

- Distinct layers of communication, with deepening engagement for those with more vested interest.
- Regular and sustained communication under a clearly identifiable brand.
- Communication and engagement that provides substantial content, rather than procedural progress.
- Authorization under the relevant government protocols.

Key takeaway: Distinctly branding the DPI roadmap implementation may help improve public communication. A multi-channel campaign may be required to socialise the message effectively.

Key output: After this step, there should be a plan to launch the DPI Roadmap to your target audiences, along with a clear sense of how communications will be sustained.

3. FRAMING THE CONTENT: WHAT IS IN A GOOD DPI ROADMAP?

These seven steps generate the raw information that is ultimately assembled into a DPI Roadmap. But what should a DPI Roadmap itself look like?

A good roadmap sits at the tip of an iceberg of information: it is a succinct document which crystallises key choices from a base of underlying research, engagement, and discussion. Additionally, it should have these attributes that can be turned into a checklist.

The decisions about how to frame the DPI Roadmap start with defining its audience. *Who is expected to read it? Is the intended audience limited to staff within affected ministries or agencies, or does it include a wider group such as journalists, public influencers, or even the general public?* The target readers' level of familiarity with the concepts will affect how much background description is necessary. Access to supporting documents can be provided outside of the DPI Roadmap to keep the main document lean and readable.

Although the content of a roadmap will always be tailored to a given country context, a DPI Roadmap should typically include the sections shown in the 'essential' column below. Where appropriate, and if resources permit, additional elements can be included from the 'extended' column.

A GOOD ROADMAP:

- Assesses the country context clearly.
- Sets out the desired destination with sufficient clarity.
- Sets out principles or guidelines to apply throughout the process.
- Provides sufficient flexibility to adjust course where needed.
- Identifies key dependencies for sequencing initiatives.
- Provides a clear rationale for prioritizing initiatives.
- Sets out clear indicators to measure progress.
- Uses clear language and images to communicate effectively to its audience.
- Identifies the agency responsible for monitoring and updating the roadmap.

Key takeaway: Defining the target audience for the DPI Roadmap is an essential starting point that will determine what the end-product needs to be.

CONTENT OF A DPI ROADMAP

Essential Level **Extended Level**

FOREWORD/ ENDORSEMENT	• Statement from mandating authority responsible for roadmap			A short statement from a relevant authority to create clear endorsement There could be multiple statements from affected agencies to add to authority
INTRODUCTION	• **Scope:** To which sectors and levels of government/society does this roadmap apply? • Intended readers of document • Time period of roadmap	All of these are covered at basic level Typically 3-5 years	• Process • Background on concepts	Likely not covered
		As for essential		Describe the process followed and how it allowed for consultation; Include a primer on the concepts with further references for unfamiliar stakeholders
STARTING CONTEXT	• Identifying the driving motivator • Assessment of readiness of foundational systems • Reference and linkages to other existing relevant frameworks or roadmaps (domestic or international) • Identifying material risks and tradeoffs	All of these are addressed at a basic level	• Recognition of exogenous vs endogenous factors	Likely not covered
		Add greater depth of assessment of the existing DPI building blocks (possibly in annexes)		Including some level of scenario analysis may help identify exogenous and endogenous factors
GUIDING PRINCIPLES	• A set of principles about technology use and deployment which will be used generally and throughout the period to guide and inform decisions along the journey			This could be a simple table or list Including a rationale or extended description of principles will help
USE CASES SELECTED	• Prioritization: how they were chosen • Sequencing: general timing and how certain ones may be pre-requisites for others • Resourcing: what it will take to deliver • Responsible parties: who is charged with executing on a use case			Each of these should be addressed at a basic level Sequencing may be shown using a GANTT chart The description of use cases could include end user research and rationale for prioritisation
INDICATORS	• Monitor progress, at use case or overall level			These are covered at an overall level More details added could include sets of indicators for chosen use cases; and provision for external monitoring
GOVERNANCE OF DPI ROADMAP IMPLEMENTATION	• Who is responsible for monitoring progress? • What is the process to amend the roadmap? • When will reviews/updates be provided? • How will this capacity be resourced?			This at least specifies the core agency responsible for implementation More detail could be added on the roles and secretariat structure supporting the roadmap implementation
COMMUNICATIONS STRATEGY	• How will the roadmap be communicated to affected stakeholders?			This may not be part of the basic roadmap The enhanced level should describe the communication approach

Key takeaway: There are some essential components of any good roadmap. While a DPI Roadmap may have standard headings, no two country roadmaps will look alike.

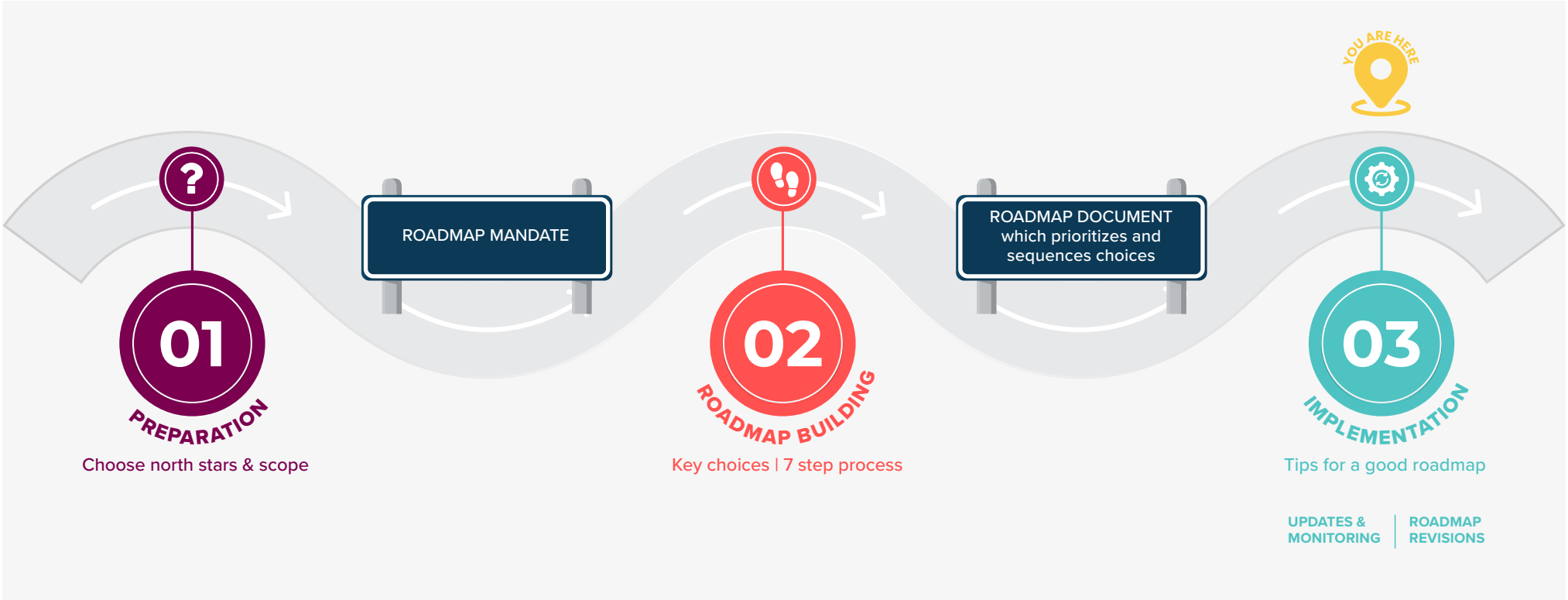
SECTION 4

WHAT DOES IMPLEMENTATION OF A DPI ROADMAP ENTAIL?

PHASE 3: IMPLEMENTATION

A DPI Roadmap is only the start of a longer DPI journey that involves implementing complex and varied approaches for different DPI building blocks.

DPI implementation rapidly becomes specific to the building block in question. While some components of DPI, such as payment systems, already benefit from extensive implementation guidance, others such as data exchange are at earlier stages of having widely available practical resources. However, in a number of implementation areas such as monitoring, evaluation, and financing DPI, there is a clear demand for more practical guidance. Members of the consortium who produced this Playbook – as well as other partners – are already at work building the evidence bases that can inform future guidance.



1. PICK THE RIGHT BATTLES.

Governments operate within political and financial constraints, making it impractical to rebuild every system or digital product from scratch. Limited budgets, competing policy priorities, and administrative complexities mean that the central entity charged with implementation must be strategic in selecting its battles. Even after the DPI Roadmap is complete, the key is to continue to prioritise initiatives that offer the highest societal impact with the lowest execution barriers. These should be projects that can demonstrate quick results and build momentum while laying the foundation for broader DPI expansion. Success requires constant forward movement, progressing step-by-step towards the goal of a fully operational DPI ecosystem. Focusing on nationwide, scalable infrastructure instead of isolated digital products ensures that investments support long-term transformation rather than short-lived solutions.

2. ACCELERATE DPI IMPLEMENTATION BY LEARNING AND ADJUSTING THE APPROACH IN PRACTICE.

Taking an agile approach, rather than waiting years for bespoke design and implementation cycles to be completed, can help create quick wins and build momentum. The following strategies may support acceleration:

- Utilise pre-trained service providers to configure DPI components, ensuring compatibility with existing infrastructure.
- Scan and catalogue existing technologies and systems that offer the opportunity for enhancement and use.
- Train local teams to sustain DPI expansion without long-term external dependencies.
- Adopt Microservices Architecture, allowing for modular development, scalability, and flexibility in integrating various services. This approach reduces vendor lock-in and enhances adaptability for future technological advancements.
- Consider hyperscale cloud platforms that can support rapid scale-up and handle large operational demands efficiently.

3. ENSURE ONGOING ACCESS TO FINANCIAL AND HUMAN RESOURCES.

Although a DPI approach is likely to save money compared with traditional technology solutions over time, it still requires a multiyear financial investment, especially at the start. Governments should embed digital public financial management (DPFM) practices to ensure responsible allocation of resources. This includes prioritising DPI investments within national budgets and medium-term expenditure frameworks, ensuring stable multiyear operational funding for the implementation team and sufficient capital investment to build foundational DPI components.

There are also innovative financing mechanisms that may support implementation, including:

- Leveraging public-private partnerships (PPPs) to co-fund DPI projects.
- Mobilising multilateral funding from institutions like the World Bank, UNDP, and regional development banks.
- Exploring digital infrastructure bonds and green financing to support sustainable DPI growth.

Apart from finance, human capacity development is crucial to build the technical and managerial expertise needed to sustain DPI building blocks. Capacity-building programmes in the public sector can:

- Train government officials on DPI policy, governance, and data security.
- Partner with universities and the tech sector to build a skilled workforce.
- Ensure inclusive capacity-building programs, targeting underserved communities.

4. ESTABLISH REAL-TIME MONITORING SYSTEMS, IMPACT ASSESSMENT FRAMEWORKS, AND PUBLIC ACCOUNTABILITY MECHANISMS.

DPI is, at its core, meant to improve lives by accelerating service delivery and promoting economic growth. To that end, embedding the UN Safeguards and reporting on their effectiveness ensures that a DPI approach remains equitable, privacy-conscious, and resilient is critical to any roadmap. These systems create feedback loops that enable the updating of a DPI Roadmap, so that it remains relevant during its time period. Actions to create accountability include:

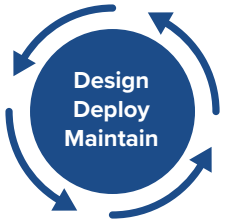
- Define and monitor standard KPIs in the following areas:
  - Adoption metrics (for example, percentage of population using DPI services).
  - Service delivery efficiency and cost (for example, time reduction in benefit disbursement).
  - Inclusion indicators (for example, accessibility in rural areas and gender-based usage gaps).
  - UN Safeguards maturity assessment.
- Deploy digital dashboards that enable real-time tracking of DPI performance for adaptive decision-making.
- Establish public accountability mechanisms, including:
  - Publishing annual DPI reports and service efficiency metrics.
  - Setting up grievance redressal platforms, which record user feedback and facilitate speedy resolution.
  - Engaging in ongoing citizen consultations to refine DPI services based on user input.
- Leverage AI for continuous monitoring, like AI-driven analytics that can detect inefficiencies, automate fraud detection, and enhance service optimization.
- Conduct iterative adaptation, utilising predictive analytics and machine learning to proactively forecast and address DPI bottlenecks.

Understanding the impact of digital transformation through DPI requires a rigorous focus on outcomes. In practice, this could take the form of metrics to assess progress at the level of input and evaluation using four categories (Access, End user experience, Accountability, and Sustainability) and at the level of outcomes and impacts on people, households, government and private sector.

EXAMPLE 8:
A DPI MONITORING APPROACH

Source: DIAL

DPI IMPLEMENTATION LIFECYCLE



DPI attributes
> Interoperable + extensible
> Private + secure
> Foundational
> Transparent + publicly accountable
> Inclusive + non-discriminatory

INPUT + EVALUATION METRICS

Access
> Available
> Affordable
> Inclusive + non-discriminatory
> Reductions in barriers to use at service level

End-user experience
> Convenience
> Ease of use
> Satisfaction
> Meaningful redress
> Data portability

People + Households

Accountability
> Public oversight
> Transparency
> Security
> Consumer protections
> Data protections
> Privacy protections
> Participatory process
> Responsiveness to feedback

Sustainability
> Trust
> Financial sustainability
> Maintenance practices
> Monitoring systems
> Scalability
> Human capacity
> Interoperability
> Extensibility
> Developer tools + support
> Standardized processes

Government + Markets

OUTCOME + IMPACT METRICS

People
> Trust in digital ecosystem, etc.

Households
> Health, education, resilience, empowerment, etc.

Government
> Efficiency, citizen satisfaction, etc.

Markets
> Entrepreneurship, growth, etc.

SECTION 5

WHAT ARE SOME NEXT STEPS?

A good DPI Roadmap should become a valued guiding framework.

A good DPI Roadmap takes an investment of time and effort. This investment should be proportionate to the potential return measured in terms of attaining national priorities. The payoff comes downstream through gaining faster, surer momentum during implementation and avoiding delays and wasted effort. Crafting a good whole-of-government DPI Roadmap first can be seen as a downpayment towards expanding the approach to cover wider swathes of the society, unlocking broader benefits.

Indicators like these suggest that a DPI Roadmap is in fact valued and valuable:

- Stakeholders continue to refer to the given DPI Roadmap to guide decision-making more than a year after publication.
- The given DPI Roadmap remains relevant to changing circumstances, even if updates are needed.
- The country's position on its digital journey is clear, helping align the actions of all stakeholders.
- Progress indicators or markers are published regularly to support accountability.

This Playbook sees a DPI Roadmap not as a precursor to a DPI journey but as an integral and useful part of that journey. The DPI Roadmap process itself should signal and entrench the very principles that make the DPI approach compelling — agility, responsiveness, openness, modularity, and privacy and security by design.

ANNEX A: USEFUL DPI RESOURCES

UNDERSTANDING WHAT DPI IS AND ITS BENEFITS — A SENIOR POLICY MAKER VIEW

There are now a number of foundational reports that provide a clear introduction to the 'what' and 'why' of DPI. If we were to suggest just one, it would be the following comprehensive and updated framing overview from the World Bank:

- DPI and Development: a World Bank Group Approach (2025)

But these also may be helpful:

- DPI Approach: A Playbook: UNDP's original DPI Playbook from the year that DPI launched on the G20 stage (2023)
- What is Good DPI?: DIAL asks about the characteristics that make DPI good (2024).
- The Universal Digital Public Infrastructure Safeguards Framework: the UN Office of the Secretary General's Envoy on Technology and UNDP published this framework in 2024 which calls out potential risks and provides a guide to building safe and inclusive DPI.

THE CONTEXT OF DIGITAL GOVERNMENT

The DPI approach has evolved in the context of broader approaches to digital government. As the Playbook explains, a DPI Roadmap does not replace or substitute for digital transformation strategies or visions, but rather builds on them, in line with the recommendations of the OECD's Digital Public Infrastructure for Digital Governments (2024). The OECD's own Digital Government Toolkit helps governments implement its recommended good digital practices.

Under Argentina's Presidency in 2018, the G20 published a set of Digital Government Principles. The Principles for Digital Development (updated in 2024) provide a widely endorsed 'compass' for policymakers, development practitioners and technologists who wish to see sustainable and inclusive outcomes from digital initiatives.

IMPLEMENTING A DPI APPROACH — A TECHNICAL LEVEL VIEW

CDPI's DPI Wiki distils years of practical implementation experience and insight across countries and is designed to be a living resource, constantly updated with what is new and what is important. It includes a section that guides the choice of possible first use cases, together with technical notes about each of the DPI building blocks outlined further below.

You will find further examples of DPI case studies and recommendations in the G20 Policy Recommendations for Advancing Financial Inclusion and Productivity Gains through Digital Public Infrastructure: a technical report published under G20 GPFI in 2023.

National and regional research provides a spotlight on particular issues. For example:

- India's trade association NASSCOM published a useful report documenting the status of DPI across a wide range of applications and sectors in India in 2024.
- In Digital Public Infrastructure: A Practical Approach for Africa (2025), three African researchers set out their view of how the African context matters.

SPECIFIC DPI BUILDING BLOCKS

INSTANT PAYMENT SYSTEMS

There is a long history of research and exploration especially around the payments building blocks which today are recognized as part of a DPI approach.

The international standard setting body for payments, the Committee on Payments and Market Infrastructure at the Bank for International Settlements (BIS), has published this 2024 paper on the evolving landscape for instant payment: Fast payments: design and adoption. The BIS Innovation Hub also supports innovations around instant payments on a cross-border basis, with the results of one recent project available here:

- Project Nexus – Enabling instant cross-border payments (2024) BIS Innovation Hub

The UN Principles for Responsible Digital Payments (2018) serves as a practical guide for governments, companies, and international organizations embracing responsible digital payments to build trust, mitigate risks, and drive inclusive economies.

Other entities monitor developments around instant payments:

- FASTT Project at the World Bank is a repository of research and case studies on global payment systems.
- The SIIPS Report by AfricaNenda Foundation provides an annual update on the state of inclusive instant payments systems in Africa.

Research group IPA has provided a comprehensive summary of evidence on the impact of instant payments to date *here*.

DIGITAL IDENTITY

The ITU has provided a comprehensive set of guidelines for identifying the main aspects that need to be considered in the design, development, and implementation of a National Digital Identity Framework in their Digital Identity Roadmap Guide (2018).

In addition, OECD and G20 have provided recommendations and resources for digital identity approaches:

- OECD Recommendation on the Governance of Digital Identity, adopted by 38 countries
- G20 General Principles on the Governance of Digital Identity, Annex 2 to the G20 DEWG Maceio Ministerial Declaration
- OECD/G20 Collection of Digital Identity Practices
- OECD/G7 Mapping Exercise of Digital Identity Approaches

VERIFIABLE CREDENTIALS

CDPI's Wiki provides a summary of what verifiable credentials are and how they work.

CDPI has also published a 2025 vision paper on how User Centric Credentialling and Personal Data Sharing can help address the issues around centralized data exchange.

DATA EXCHANGE

This is a fast-evolving area of interest and further research.

DIAL has contributed these thought pieces:

- Data exchange is a key component of a country's digital public infrastructure. What does good technical architecture look like?
- What are some of the different models for data sharing, and how do they work?

The following OECD publications provide guidance on data sharing:

- OECD Recommendation on Enhancing Access to and Sharing of Data (whole of society)
- G20 Compendium on Data Access and Sharing Across the Public Sector and with the Private Sector for Public Interest (whole of society)
- The Path to Becoming a Data-Driven Public Sector (2019) (whole of government)

MONITORING, EVALUATION AND LEARNING FOR DPI

The need for DPI metrics to monitor both usage and impact on people is widely recognized. Yet, accurate and standardized measurement is at an early stage. DIAL has a process underway to make progress in this area—see here.

EXAMPLES OF EXISTING ROADMAPS

This Playbook refers to a variety of different types of roadmaps — not all are DPI Roadmaps, as they may be broader (data and digital) or specific to a particular building block of DPI (such as digital payments). You can reference examples through the links in the table below.

		Sector-specific	Whole-of-government	Whole-of-society
		Scope of coverage		
Geographic level	International	G20 Cross-border Payments Roadmap		SDG Regional Roadmap Roadmap to Regional Integration for WTO Trade Agreement
	National	Bangladesh Digital Payments Roadmap	UK Digital and Data Roadmap 2022 South Africa Digital Transformation Roadmap 2025	
	Sub-national			

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WHAT THE PLAYBOOK CONSORTIUM PARTNERS OFFER

All of the partners in the Consortium which created this Playbook provide different forms of assistance for countries on the DPI journey as shown below.

Partner	Forms of support offered	Website
AfricaNenda Foundation	AfricaNenda supports central banks, instant payment system operators, policymakers, regulators, and financial inclusion advocates to accelerate the design, development, launch, and continuous improvement of inclusive instant payment systems (IIPS) in Africa. AfricaNenda works at all levels of the financial ecosystem to provide technical assistance and policy support, engage in capacity building, share knowledge and best practices, and advocate for inclusivity.	www.africanenda.org
Better than Cash Alliance	Through policy advocacy, technical assistance, and institutional capacity building, the Alliance helps advance usage of responsible digital payment systems that expand access, empower underserved populations, and enable digital public service delivery at scale.	www.betterthancash.org
Centre for DPI	CDPI provides pro-bono technical (tech neutral) advisory for countries at all stages of the DPI journey.	https://cdpi.dev/
Digital Impact Alliance	DIAL provides DPI pre-implementation support and data governance expertise to governments; This includes strategic interventions to: create decision-making frameworks for DPI design; map existing data and digital ecosystems; and build the capacity for ongoing self-assessments and improvements; and more. DIAL also hosts a peer learning platform for countries, the Africa Data Leadership Initiative, which fosters deep exchanges between policymakers, private sector stakeholders, and others to address emerging challenges and opportunities in Africa's data landscape.	https://dial.global/
Integral: Governance Solutions	Integral advises on the design and operation of effective governance for Digital Public Infrastructure.	www.integralsolutionists.com


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