Position Paper

DIGITAL PATHWAYS FOR SIDS 2.0

Defining the pathway for Small Island DIGITAL States in the Caribbean

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SIDS 2.0: THE BEGINNING OF A NEW WAY OF COMING TOGETHER IN THE CARIBBEAN

Digitalization is a concept that has been introduced previously by virtually all institutions, and every government has initiated attempts to define it in a way that suits them, often with a sectoral focus or limited coverage. Small Island Developing States (SIDS) face multiple approaches in the digitalization landscape yet need a singular holistic framework to guide comprehensive national digital agendas and regional efforts. Despite the critical role of the private sector in supporting digitalization efforts, challenges persist due to limited market size and high infrastructure development costs, and national governments are often left as sole investors.

The SIDS 2.0 high-level conference aims to address these gaps by defining a concrete and tangible objective: the emergence of SIDS 2.0, which denotes Small Island Digital States. It also delineates pathways to attain this status with specific dimensions and metrics. This strategic initiative seeks to provide countries with a common baseline and monitoring framework to propel digital transformation and make efforts interconnected.

The SIDS 2.0 initiative is a collaborative effort to establish a shared vision and operational framework. It involves country self-assessments, action plan formulation, intervention prioritization, implementation, and iterative self-assessments. This structured approach allows SIDS 2.0 to navigate digital transformation complexities, aligning with national development priorities, regional capabilities, and international best practices.

Crucially, the success of SIDS 2.0 hinges on identifying and mobilizing financial and technical resources to support countries in implementing action plans and advancing along their digital pathways. Partnerships with multilateral institutions such as the Development Bank of Latin America (CAF) and the Inter-American Development Bank (IDB) offer avenues for financial and technical support, while organizations like the United Nations Development Programme (UNDP) provide technical assistance and expertise. Lead countries like Trinidad and Tobago stand ready to offer coaching and guidance alongside other entities poised to join this collaborative effort.

The introduction of the SIDS 2.0 approach signifies a paradigm shift in how SIDS approach digital transformation. It offers a clear roadmap and collective action framework, heralding an unprecedented opportunity for SIDS to leverage digitalization. This can act as a catalyst for sustainable development, economic growth, and resilience in the face of evolving challenges, underlining the significance of the high-level conference as the start of this transformative journey.

1 THE CHALLENGE

The term "Small Island Developing States" (SIDS), while capturing the geographical and developmental context of the Caribbean islands, inadequately portrays the dynamic and multifaceted nature of these nations, especially in the context of digital transformation. Despite the constraints traditionally associated with SIDS, the Caribbean countries have demonstrated significant advances towards integrating digital technologies into their national frameworks. This progress underscores a critical shift towards leveraging digital innovation for sustainable development, thereby necessitating a more nuanced understanding and approach to their development narrative.

The Caribbean has made notable strides in digital transformation, as evidenced by various initiatives and projects aimed at improving digital access, infrastructure, and skills across several islands. Programmes like the [Caribbean Digital Transformation Project, the Caribbean Regional Communications Infrastructure Program (CARCIP)](#) or initiatives like the [CANTO 37th Annual Conference and Trade Exhibition](#) highlighted the progress in digital evolution across the Caribbean.

Recognizing the critical role of digital transformation in the sustainable development of Caribbean SIDS, the United Nations Development Programme (UNDP) with technical support from UNCDF, and in close collaboration with CAF Development Bank and the Inter-American Development Bank (IDB), under the patronage of the Ministry of Digital Transformation, Trinidad and Tobago, are spearheading a regional process to further accelerate this transition in what is called the SIDS 2.0 initiative.

2 SIDS 2.0 INITIATIVE

The kick off for this process culminates in the proposal of a SIDS 2.0 High-Level Conference (April 2024), an event aimed at introducing a comprehensive framework that outlines pathways to becoming a Small Island DIGITAL State. It aims to redefine the digital transformation agenda for Caribbean SIDS within a global context.

During the event, the introduction of a SIDS 2.0 framework will help delineate five pathways, each characterized by multiple dimensions. These dimensions offer an introduction of various milestones to assist the Caribbean SIDS in identifying their digital maturity and pinpointing critical gaps within their sectors. One objective of the conference is to initiate dialogue on the dimensions and engage in consensus building to validate the dimensions of each pathway and establish milestones as part of an overall framework to achieve SIDS 2.0 digitalization goals. Alignment among Governments, Regional and International Institutions thus enables the development of a shared action plan to accelerate digital transformation through regional collaboration, integration, and resource mobilization. Furthermore, this initiative seeks to facilitate a more profound understanding among the islands of their current standing in the digital transformation journey.

As such, the objective of the SIDS 2.0 Conference is envisioned to be a platform to articulate and refine the concept of "Small Island DIGITAL States," moving beyond traditional development paradigms to embrace a digital-first strategy. The conference intends to:

- **Define the SIDS 2.0 Concept**: Establish a shared understanding of what it means to be a Small Island DIGITAL State, emphasizing the transition from traditional developmental models to digitally empowered societies.
- **Agreement on Foundational Framework and Pathways:** Initiate dialogue to gain a common vision on a shared a framework which outlines the five critical pathways towards digital transformation.
- **Initiate discussions around Dimensions and Milestones**: Starting a dialogue to identify the dimensions that make up each SIDS 2.0 pathway. The dimensions will expand into key milestones that can serve as a guide for Caribbean SIDS to assess their digital maturity across each Dimension, as well as help identify sectoral gaps and benchmark progress[1].

The initiative represents an opportunity for national and regional policymakers, international financial institutions and partners to shape the future of digital transformation in the region collaboratively by coming together to establish a regional framework and gain consensus on key milestones and priorities. The private sector's role in supporting digitalization in SIDS is critical, particularly considering the need for economies of scale to attract investments. By pooling resources and expertise, private enterprises can help overcome the challenges of limited market size and high costs associated with infrastructure development in SIDS. Through collaboration with governments and international organizations, the private sector can drive initiatives to achieve economies of scale in digital infrastructure deployment, making investments more attractive and sustainable. This approach not only accelerates the pace of digital transformation but also fosters innovation and competitiveness, positioning SIDS to harness the full potential of the digital economy for sustainable development. By bringing together stakeholders from across the Caribbean and beyond, Caribbean SIDS can overcome the unique challenges they face and harness the transformative power of digital technology for sustainable and inclusive development.

Once the SIDS 2.0 and digital pathways framework have been agreed upon, next steps would include dialogue to finalize dimensions and milestones of each pathway, establishing a framework to measure progress and impact, developing self-assessment tools and setting regional priorities and actions essential for propelling digital advancement. Identification of institutions that can provide resources and expertise required for countries to advance in each pathway will be an essential element of this initiative together will promotion of multi-country initiatives that, under the leadership of regional organizations and Government agencies, can accelerate and make more efficient progress at national and Caribbean levels. This dialogue will also evaluate regional leadership capabilities and current institutional arrangements to ensure that the framework addresses both immediate and long-term needs, fostering a unified approach to overcoming barriers to digital adoption. Collaborative Regional Advancements will be key to sharing knowledge, resources, and strategies.

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[1] **Note**: While the conference will make reference to a set of indicators that can effectively measure the impacts of achieving digital transformation efforts, further discussion and consensus on indicators, targets and impacts is reserved at a future stage.

3 SIDS 2.0 (PROPOSED) DEFINITION

First, defining SIDS 2.0 is crucial because it demonstrates the strategic shift for Caribbean Small Island Developing States towards becoming an integrated digital society, transitioning from traditional development models to a future where digitalization is at the core of advancement. SIDS 2.0 is an evolved status of Small Island Developing States in the Caribbean through a coordinated regional process of using digital technologies to transform traditional analogue systems, procedures, and businesses into digital ones. It involves the adoption of digital tools, technologies, and platforms to improve efficiency, effectiveness, and innovation across various sectors, including government, business, education, healthcare, and entertainment.

Moreover, while Caribbean nations recognize the imperative of transitioning into digital states, their global competitiveness remains relatively weak when they operate in isolation. Therefore, a compelling strategy lies in forging an integrated digital Caribbean, where collaborative efforts lead to enhanced competitiveness on the global stage. Consequently, the conference aims to foster partnerships among Caribbean nations in a synergistic manner, recognizing that collective strength far outweighs individual efforts. This overarching theme of collective alignment and partnership underscores the strategic essence of the event, positioning the Caribbean region as a formidable force in the digital landscape.

SIDS that will reach the full digital status, will leverage digital technologies to address unique socio-economic challenges, enhance governance, foster economic growth, and promote environmental sustainability. This new paradigm aims to harness the power of connectivity, digital infrastructure, cybersecurity, and emerging technologies to create a digitally empowered society where government services are more accessible, enhanced private investments drive more innovative and competitive businesses, and communities are more engaged and informed.

In this definition, SIDS 2.0 can be defined as including the following characteristics:

- **Infrastructure:** the wired and wireless foundations for digital transformation, and the broader 'access enablers' ensuring access to the Internet and digital, including universal access for the entire population.
- **Government:** playing a central role in national digital development, including in designing and delivering public services, often becoming the main investor, and shaping a future-proofed digital public sector.
- **Regulation:** building the framework and guidelines for the digital economy and society, from cybersecurity protections to opening data to the private sector and civil society.
- **Economy:** a crucial actor in driving investment and trade, increasing digital uptake and building digital products and services that enable Caribbean SIDS to be more competitive in the global economy.
- **People:** SIDS' greatest asset; all people must be able to benefit from the potential of digital, with no one left behind.

These definitions are grounded in the global [UNDP Digital Transformation Framework for Government (Nov 2023),](#) which sets out the most important areas and topics that actors must collaborate on to secure an inclusive digital transformation. The Framework places UNDP's Principles of Digital Inclusion at its centre and incorporates Digital Public Infrastructure (DPI) as a critical enabler. It helps to guide the assessment, planning and implementation of digital initiatives.

4 DIGITAL PATHWAYS

The SIDS 2.0 initiative seeks to draw consensus around five core pathways which serves as the foundation for transitioning Caribbean Small Island Developing States into Small Island Digital States (SIDS 2.0): infrastructure, government, regulation, economy, and people. Through this multi-tiered approach, the framework offers a comprehensive tool for evaluating and fostering inclusive digital transformation across the Caribbean region, guiding nations towards sustainable progress in the digital era.

Recognizing the intricate landscape of digital transformation, these dimensions are designed with specific indicators and benchmarks, facilitating a methodical assessment of progress for each country. This structured approach not only assists nations in identifying the necessary policies, measures, and investments to achieve concrete objectives and results but also in pinpointing the essential resources, services, technical assistance providers, and potential investors required for this journey. The collaborative effort led by UNDP (with support from the UN Capital Development Fund – UNCDF), CAF, IDB, and the Ministry of Digital Transformation in Trinidad and Tobago as one of the main engines of digitalization in the region, underscores the pivotal role of regional organizations in fostering cooperation, development, and integration among Caribbean states and territories.

The Digital Pathways framework emerges as a crucial tool for stakeholders to align efforts towards an inclusive digital transformation vital for the sustainable development of SIDS and the wider Caribbean. The unique focus in the Caribbean lies in crafting a shared action plan to accelerate digital transformation through regional collaboration and connectivity. This may include initiatives such as sharing data centers, securely interconnecting government networks, integrating IT solutions, and fostering interconnection among small businesses using digital technologies. By emphasizing regional cooperation, the event aims to leverage collective resources and expertise to advance the digital transformation agenda in the Caribbean swiftly.

We envision a framework which is composed of various digital pathways, each with their own dimensions and milestones that, when properly assessed, can show progress of each country and help countries put in place policies, measures and investment towards concrete objectives and results. While the UNDP Digital Transformation Framework proposes an initial set of dimensions in alignment with the 5 digital pathways, the intent is for countries to substantively shape the pathways to create a regionally focused framework with buy-in at the Ministerial level of all countries. To this extent, the SIDS 2.0 Digital Pathways Framework is considered a living document during the SIDS 2.0 conference to be finalized with inputs from all relevant parties. To aid discussion, the SIDS 2.0 conference puts forth the following pathways, overarching dimensions, and milestones to aid discussion and dialogue.

UNDP Digital Transformation Framework – UNDP Chief Digital Office

At the initial level, countries may need help with basic foundations, such as inadequate infrastructure and digital skills, which impede further advancement. Moving up the ladder, some nations might exhibit progress in isolated aspects of digital transformation, albeit without the necessary strategy guiding their efforts. As countries ascend, they may demonstrate systematic advancements in critical areas like skills development and digital public services, driven by identified priority areas. At the pinnacle, countries with clear strengths in digital transformation and well-established foundational elements signify a mature stage of development. Ultimately, the highest level denotes countries advancing comprehensively in all facets of digital transformation, underpinned by an integrated and coordinated strategy.

In addition, around the world various standard setting bodies and governing institutions have also developed frameworks with key ingredients or a blueprint required to achieve some of the high-level metrics, and help countries assess where their largest gaps remain which slow progress towards a full Digital transformation.

With the purpose of assisting countries in the region, identification of resources required, services and technical assistance providers as well as potential investors will be an essential part of the formulation of the digital pathways. In this context, UNDP, CAF and IDB present themselves as facilitators in this process. Further, these international institutions may be leveraged to provide globally relevant technical expertise, access to resources to facilitate implementation of digitalization efforts, and continued coordination of stakeholder efforts.

5   FRAMEWORK FOR ASSESMENT: DIMENSIONS AND MILESTONES

The foundation for this framework is rooted in the UNDP's Digital Transformation vision, that sets out the most important areas and topics that actors must collaborate on to secure an inclusive digital transformation. The Framework places UNDP's Principles of Digital Inclusion at its centre and incorporates Digital Public Infrastructure (DPI) as a key enabler. It consists of five pillars: (1) Infrastructure; (2) Government; (3) Regulation; (4) Economy; and (5) People.

The below section intends to unpack each Digital Pathway and Dimension into concrete benchmarks which can collectively form a framework for nations to self-assess and chart their progress towards becoming digitally advanced states. It offers a structured approach to identifying infrastructural strengths and areas needing development, aligning with the overarching goal of the SIDS 2.0 initiative to foster a comprehensive and inclusive digital transformation.

The achievement of the dimensions and sub-dimensions serve as a strategic checklist to propel their nations forward. To operationalize this vision, the proposed checklist of dimensions proposed in Annex 1, policymakers can systematically address each dimension as a step in a checklist, moving progressively towards the realization of a digital SIDS 2.0.

5.1   DIGITAL PATHWAY: INFRASTRUCTURE

Infrastructure in the digital transformation context refers to the foundational physical and digital facilities and systems serving a country or region. For SIDS in the Caribbean, this includes physical components like fibre-optic cables, data centres, and cellular towers as well as broader access enablers such as electricity, internet connectivity, and digital devices. A resilient and accessible infrastructure is vital for supporting digital activities across all sectors, ensuring that digital services can withstand and recover from natural disasters, cyber-attacks and any other catastrophic events that may cause loss of data and loss of connectivity in the Caribbean. It lays the groundwork economy and society.

This section aims to propose dimensions for governments to self-assess the readiness and resilience of digital infrastructure within Caribbean SIDS, encompassing both physical and digital components essential for supporting digital activities across all sectors. Additionally, it will analyse the extent to which infrastructure supports the digital economy and society, laying the groundwork for sustainable growth and development.

5.1.1   Dimension 1.1: Robust Physical Infrastructure and ICT Networks

Availability and quality of digital infrastructure: the physical infrastructure that carries digital data between devices, storage locations and services. Our approach focuses on broadband, mobile internet and electricity. The prevalence and quality of high-speed broadband connectivity across the nation, encompassing both urban and rural areas, is a primary indicator of digital readiness. This comprises of a country's *access to and availability of:*

> **1.1a Access to fibber-optic networks**: The backbone of a robust digital infrastructure, providing high-speed internet and supporting large-scale digital operations.

1.1b Widespread availability of broadband networks: Ensuring that high-speed internet services are not just concentrated in urban centers but are dispersed uniformly, to include specifically rural and other traditionally underserved communities.

1.1c Availability of 5G / Advanced Wireless Networks: The rollout of 5G networks exists, marking the next generation of mobile internet connectivity, offering faster speeds and more reliable connections.

5.1.2   Dimension 1.2: Access Enablers

Access of disadvantaged socio-demographic groups to the internet and other technologies. The goal is to ensure universal access for the whole of society regardless of structural barriers such as infrastructure, income, culture, disabilities, geography and skills. Services and regulatory frameworks that support and maximize the utility of the Physical Infrastructure. They ensure that the infrastructure is accessible, inclusive, and utilized to its fullest potential:

1.2a National Data Warehousing: Government data centers exist and are established for national data storage and processing capabilities. These facilities are crucial for hosting, processing, and managing large datasets, enabling scalable and flexible digital services.

1.2b Public Data Warehousing: Alternatively, access to public cloud computing platforms is not prohibited and is adequate for government and societal purposes.

5.1.3   Dimension 1.3: Modern Financial Infrastructures

Modernized financial infrastructures that facilitate the flow of fast, cost-effective financial transactions, and enable investment and lending as part of an inclusive, digital financial ecosystem.

1.3a Modernized payment infrastructures: Modernized and open Real Time Gross Settlement System (RTGS), Card Switch and Automatic Clearing House to facilitate the transfer of funds between banks and non-banks in a fast, secure, and efficient manner.

1.3b Digitized Credit Infrastructures: Digitized credit bureaus and collateral registries to enable borrowers to access credit quickly and lenders to better assess creditworthiness more accurately.

1.3c Availability of Faster or Instant Payment Systems: Enables near-instantaneous processing and settlement of transactions to allow individuals and businesses to transfer large volumes, low value funds in real-time or within seconds, and is interoperable and able to be integrated with a variety of digital technologies and service providers.

5.1.4   Dimension 1.4: Digital Platforms

Platforms which enable a variety of interactions and transactions in the digital space. It is an integrated set of digital services and infrastructures that allow users, including individuals, businesses, and government entities, to exchange information, goods, services, and value. It includes the establishment of:

1.4a Interoperability Across All Infrastructures: All systems are interoperable for banks and licensed non-banks alike, enabling cross-institutional transactions, sharing and sophistication.

1.4b Established National e-Payment Gateways: A standardized method for processing digital payments that can be universally accessed and utilized exists for the nation.

1.4c Open Application Program Interfaces (APIs) Available: Open APIs exist in the country where services can communicate and operate seamlessly with one another.

5.1.5 Dimension 1.5: Establishment of Digital Identity System

A comprehensive Digital ID system exists, particularly within government services, enables the verification of individuals' identities securely and efficiently, which is foundational for access to a wide array of digital services.

5.2   DIGITAL PATHWAY: GOVERNMENT

The Government dimension emphasizes the role of public administration in leveraging digital technologies to enhance service delivery, governance, and public engagement. It involves digitizing public services and making government information and services more accessible online, which is crucial for remote and underserved areas in the Caribbean. This dimension also covers the development of digital strategies and policies, the digital upskilling of government employees, and the implementation of e-governance initiatives to improve efficiency, transparency, and citizen participation in the democratic process.

This section aims to propose dimensions for governments to self-assess the effectiveness of public administration in leveraging digital technologies to enhance service delivery, governance, and public engagement within Caribbean SIDS. Key components include the digitalization of public services and the accessibility of government information and services online, particularly focusing on remote and underserved areas. The self-assessment will also address the development and implementation of digital strategies and policies, the proficiency of government employees in digital skills, and the deployment of e-governance initiatives to improve the efficiency, transparency, and citizen participation in the democratic process. Progress will be evaluated based on the following milestones:

5.2.1   Dimension 2.1 Leadership and Strategy:

Leadership refers to the level of government commitment to digital transformation and the supporting mechanisms they put in place. This includes the development of a strategy and the institutional arrangements to coordinate the implementation of digital transformation. High level political mandate, clear responsibilities, the country has a clear institution with mandate over inclusive digital transformation and formal mechanisms to articulate/coordinate local ecosystems. Major dimensions include:

2.1a Existence of a Digital Transformation Strategy (or similar): A comprehensive digital transformation strategy exists, or related Digital Finance and E-Commerce Strategies, to serve as a blueprint, outlining key goals, timelines, and responsible parties.

2.1b An established communication strategy: A communication strategy is actualized which involves sharing publicly and periodically success stories, key metrics, and regular progress reports against predefined indicators with stakeholders to maintain transparency and build support for digital initiatives.

2.1c Existence of collaboration MOUs for cross-cutting digital aspects: Memorandums of Understanding (MOUs) exist for collaboration on areas which expand across multiple regulatory peripheries, for instance digital threats and innovations. They facilitate cooperation across various regulatory institutions and jurisdictions, ensuring a cohesive response to digital challenges and opportunities.

5.2.2   Dimension 2.2 Implementation Capacity and Systems (Core Government Systems):

Implementation capacities include the level of digital skills and talent in the public sector, the deployment of technology-enabled systems (both hardware and software) and processes and the process for funding digital transformation. The enhancement and integration of digital technologies within government operations to improve efficiency, transparency, and service delivery in Small Island Developing States.

2.2a Active Digital Government Accounting and Budget System Modernizes financial management within the government, enhancing transparency, accountability, and strategic use of resources.

2.2b Active Integrated Financial Management System: These systems consolidate government financial management processes, improving efficiency, budgeting, and financial reporting.

2.2c Active Government E-Procurement Platform: Streamlines procurement processes through digital platforms, promoting transparency, reducing procurement times, and improving access to government contracts for businesses.

2.2d Human Capital Management: A critical component of effective and accountable digital governance is the use of integrated platforms to improve core human resource functions including but not limited to: recruitment, training, performance management and separations.

5.2.3 Dimension 2.3 Digital Government Services and Platforms:

This refers to the adoption of digital solutions (and self-service, e-government portals) by government agencies to provide public services. It aims to make interactions with the government more efficient, accessible, and user-friendly for citizens and businesses alike, which is essential for transparency and engagement in the Caribbean SIDS context. The use of technology and platforms to deliver Government-to-Consumer (G2C) and Government-to-Business (G2B) services at local, regional and national levels. It also incorporates eGovernment, GovTech and Smart Public Services. Major sub dimensions generally include the establishment or existence of:

2.3a Self-service / e-government portal established for business registration and services: Simplifies the process of starting a business by allowing for online registration, reducing time and bureaucracy, and fostering a supportive environment for entrepreneurship.

2.3b Self-Service / e-government portal for Integrated Tax System: These systems streamline tax filing and payments through digital platforms, making tax administration more efficient and reducing the compliance burden on individuals and businesses.

2.3c Self-service / e-government portal for Government to Person benefits (pension, social welfare): Automate the distribution of government benefits, ensuring timely and accurate delivery to recipients, and reducing fraud and administrative costs.

2.3d Self-service / e-government portal for election systems: Enhance the integrity, accessibility, and efficiency of electoral processes, allowing for secure online voting and results reporting.

2.3e Self-service / e-government portal for digital immigration: Streamline immigration processes, including visa applications and border control, improving security and the user experience for travellers.

2.3f Government to person / business and person / business to government payments digitized: refers to the process of transitioning traditional forms of financial transactions between governments and individuals or businesses into digital formats.

5.2.4   Dimension 2.4 Open Government:

Open government refers to the degree to which governments are accessible, responsive, transparent and accountable towards individuals in their use of data and participatory tools, and the extent to which they adhere to international standards. The strategic publication and accessibility of government datasets to foster transparency, innovation, and community engagement in the digital transformation journey of Small Island Developing States. Major dimensions include:

2.4a Adequate Data Infrastructures (demand, supply, geospatial) exist for Digital Transformation This encompasses the development of comprehensive data infrastructures that support the collection and analysis of demand-side data on digital adoption and inclusion, supply-side statistics on digital finance and the economy, and geospatial data for planning and development. Moreover, these dimensions include, exploring and leveraging AI to improve service delivery and increase efficiency of government processes. Can be used for data mining, cyber security, help desks, identifying fraud, national security etc. Develop policies and standards to regulate usage.

2.4b Open Data Initiatives Exist & Data Available: A government data portal exist and is made publicly available in a structured, usable format, fostering innovation, transparency, and civic engagement.

2.4c Monitoring Framework Implemented for Digital Transformation: A robust framework exists of Key Performance Indicators (KPIs) to systematically assess and visualize progress and success in digital transformation efforts.

5.3   DIGITAL PATHWAY: REGULATION

Regulation involves creating a supportive legal and policy framework that promotes digital innovation while protecting citizens and businesses. The Caribbean SIDS context includes data protection and privacy laws, cybersecurity regulations, and frameworks for emerging technologies like blockchain and Artificial Intelligence (AI). Regulation also encompasses policies that encourage fair competition in the digital marketplace, protect consumer rights in the digital age, and ensure that digital transformation efforts are inclusive and equitable. Effective regulation is critical to building trust in digital systems and fostering a safe and competitive digital environment.

This section aims to propose dimensions for governments to self-assess of the regulatory framework concerning digital innovation within the Caribbean SIDS context. Key areas of focus include compliance with data protection and privacy laws, adherence to cybersecurity regulations, and the establishment of frameworks for emerging technologies such as blockchain and AI. Additionally, the self-assessment will examine the implementation of policies aimed at promoting fair competition in the digital marketplace, safeguarding consumer rights in the digital era, and ensuring inclusivity and equity in digital transformation efforts. The self-assessment criteria will be structured to gauge the degree of regulatory alignment with fostering trust in digital systems and cultivating a secure and competitive digital environment, considering the following milestones:

5.3.1   Dimension 3.1 Cybersecurity:
The existence of laws and other regulatory actions to prevent various forms of cybercrimes. The collective measures, strategies, and policies implemented to safeguard digital infrastructure, protect data integrity, and maintain the privacy and security of all online activities against cyber threats. Major dimensions which should exist include:

3.1a National Cybersecurity Strategy Established: A comprehensive plan exists that establishes a nation's stance on cybersecurity, detailing priorities, response protocols, national standards, and roles of different stakeholders to protect against cyber threats, stablishing national standards for cyber security. Standards would seek to provide inter alia guidelines, minimum baselines, assessment/auditing tools that government and private sector agencies that house or interact with public data can use to improve their standing.

3.1b Legal and Regulatory Framework and National Standards for Cybersecurity Established: This framework is essential for the practical implementation of cybersecurity measures, regulation of critical infrastructures, and the establishment of laws to combat cybercrime effectively. Regulatory interventions to enhance cybersecurity are important, but cybersecurity is also a cross-cutting theme, with many potential interventions, especially in infrastructure.

3.1c National Cyber Incident Response Team Operational: The presence of a dedicated team tasked with responding to cybersecurity incidents ensures rapid and coordinated action against cyber threats and vulnerabilities. Given the complexity and scale of contemporary cyber threats, island States should consider pursuing regional integration and coordination to increase their collective cyber defence capacities while actively developing offensive capabilities.

5.3.2   Dimension 3.2 Fair Market Competition:
The laws and conditions that enable the market to work well for all actors enabling them to be a driver of development. Establishing and enforcing fair competition laws and policies that are crucial for

fostering innovation and consumer protection in the increasingly digital markets of Small Island Developing States. Major dimensions which should exist include:

3.2a Competition laws and policies updated to govern digital markets Competition Laws and Policies: Laws updated to include and govern fair play in digital markets, including the gig economy, technology industry, and broader digital economy, ensuring that innovation and consumer interests are protected.

3.2b Authority(ies) designated to enforce competition laws for digital markets: An authority (or multiple) is clearly identified with the jurisdiction to enforce competition laws and investigate anti-competitive behaviour within the digital marketplace, maintaining market integrity.

5.3.3   Dimension 3.3 Data and Privacy:

The laws and other legal mechanisms that ensure that processed data is shared and governed appropriately, so that the right data assets go to the right place at the right time. Areas to be included: data privacy and protection, communications privacy, access to public information, open government data, freedom of information.

The enactment of robust data protection laws and the establishment of authoritative bodies to ensure the right to privacy and secure personal data in the digital age. Major dimensions which should exist include:

3.3a Data Protection Laws and Legislation Exist: Legislation exists that governs the collection, processing, and use of personal data, ensuring that individuals' privacy is respected and protected.

3.3b Designated Data Protection Authority(ies) exist for enforcing data protection laws: A designated body (or bodies) exist and are responsible for enforcing data protection laws, providing guidance and oversight to organizations, and safeguarding citizens' data rights.

5.3.4   Dimension 3.4 Emerging Technologies:

The laws, regulations and policies that govern technologies that are currently in development or expected to be available within the next five years and are expected to create significant social and/or economic effects. The creation of a conducive regulatory environment that encourages the exploration, adoption, and ethical integration of cutting-edge technologies into the digital ecosystems of Small Island Developing States. Major dimensions which should exist include:

3.4a Regulatory Innovation Facilitator (i.e. Sandbox, Innovation Center, Innovation Hub, Test-and-Learn, etc.) in Market: At minimum, a clear pathway for the private sector to engage with regulators to understand how to introduce or assess implications of new financial innovations looking to operate within in the existing regulatory environment. Initiatives like sandboxes and innovation hubs that provide a regulated environment for testing new technologies (however come with their own operational challenges) and business models without immediately incurring all the normal regulatory consequences of engaging in the activity. Overall, a platform for engagement with financial regulators is often deemed most important.

3.4b Framework to permit E-Money and Agent Banking aligned to good practices exists: A regulatory framework should exist that allows non-bank entities to issue electronic money and conduct banking through agents, broadening financial inclusion.

3.4c Simplified Customer Due Diligence Frameworks Established for inclusive finance: Streamlined processes should exist for verifying customer identities, essential for expanding access to digital financial services while managing risks.

3.4d Tested digital innovations in market (QR codes, remote onboarding, etc.): Legal and regulatory provisions permit the use of modern digital technologies, such as QR codes, remote onboarding, and e-signatures, facilitating efficient digital transactions. Mechanisms should also be made available (see first bullet) to evaluate the implications and integration of emerging technologies like IoT, Big Data, AI, among others.

5.3.5   Dimension 3.5 Consumer Protection:

Specific legislation that ensures the protection of consumer rights in the digital domain. The development of comprehensive protections for consumers engaging with digital markets and financial services, ensuring their rights are preserved in the face of rapid digitalization. Major dimensions which should exist include:

3.5a Consumer Protection Regime extends to Digital Market: Consumer protection activities and framework extends (or makes provisions to extend) to the digital market, covering e-commerce, digital services, and online transactions to safeguard consumer interests.

3.5b Financial Consumer Protection Framework established and extends to digital finance: Specific protections and mechanisms for financial services consumers, including complaints handling, dispute resolution, and market conduct oversight for digital finance is available.

3.5c Entity(ies) clearly designated to manage disputes and complaints pertaining to digital services: Entities clearly designated to manage disputes and redress issues arising from digital services, ensuring consumers have accessible channels for resolution.

5.4 DIGITAL PATHWAY: ECONOMY

The Economy dimension focuses on developing a digital economy that supports innovation, entrepreneurship, and sustainable economic growth. The Digital Economy can be roughly defined as all economic activity resulting from economic agents (individuals, firms, the government) creating, harnessing, integrating and leveraging digital technologies in a manner which contributes towards economic development.

For Caribbean SIDS, this includes initiatives to support digital entrepreneurship, the creation of digital jobs, and the promotion of e-commerce and digital trade. It also covers integrating digital technologies in traditional sectors such as tourism and agriculture, enhancing their competitiveness and resilience. Strengthening the digital economy in the Caribbean requires investment in digital skills training, access to finance for digital businesses, and creating an ecosystem that supports innovation and digital transformation.

This section aims to propose dimensions for governments to self-assess advancements in the digital economy within Caribbean SIDS, focusing on fostering innovation, entrepreneurship, and sustainable economic growth. Key indicators include the proliferation of digital entrepreneurship initiatives, the generation of digital job opportunities, and the expansion of e-commerce and digital trade platforms. Additionally, the self-assessment will analyse the integration of digital technologies into traditional sectors such as tourism and agriculture, assessing their impact on competitiveness and resilience. Progress will be measured based on the following milestones:

5.4.1 Dimension 4.1 Access to Digital Financial Services and Digitally Enabled Investment:

The extent to which individuals and firms have access to financial services as well as the availability and usage of digital finance (including digital payments, saving, borrowing, insuring, and investing). The Financial Services sub-dimension focuses on the availability and adoption of digital financial tools and services that support businesses, including low-tier business accounts and merchant acceptance, which are foundational for a robust digital economy. Major dimensions which should exist include:

4.1a Financial sector offers low-tier, affordable financial accounts and services to businesses: This entails ensuring market access to businesses of affordable and attainable business and merchant accounts, with tiered due diligence based on risk, so that they can better access basic banking services, cost-effective digital payment devices, and thereby have avenues to participate in the digital economy.

4.1b Diverse range of financing options, enabled by innovations in credit scoring and underwriting, available in market: Availability of a diverse range of financing options for digital start-ups, or existing ones that seek to become digitally enabled, including venture capital, government grants, and other financial instruments, to catalyse innovation and growth. The provision of financial products specifically tailored for enterprises, acknowledging the unique challenges and opportunities they face in the digital landscape, using alternative data, digital underwriting or other tools to increase lending to the MSME sector. Loans, guarantees and public investment vehicles to encourage the private sector to lend to MSMEs is also vitally important.

4.1c Financial sector offers affordable, contactless payment technologies to businesses: Encourages the implementation of contactless payment solutions to streamline transactions, elevating the consumer experience and enhancing transaction security.

5.4.2   Dimension 4.2 Digital Businesses

The market effect that digital technologies have on traditional businesses and more digitally based (or "tech") businesses. This includes the adoption of Information and Communication Technology (ICT)and digital technologies by existing businesses, startups and e-commerce. This dimension addresses the foundational requirements for establishing and running a digital business, including registration processes, incentives for digital innovation, and the protection of intellectual property. Major dimensions which should exist include:

4.2a Programs to register digital businesses or help business adopt digital tools available: A digitalized and efficient business registration process exists, which reduces bureaucratic hurdles and encourages the establishment of new enterprises, is critical to stimulating economic growth and digital entrepreneurship within SIDS.

4.2b Incentives / Subsidies available to promote business adoption of digital tools and technologies Incentives or Subsidies for Digital Innovation: Provision of financial and policy incentives to motivate businesses to adopt digital technologies and innovate, thereby enhancing their competitive edge in the digital marketplace.

4.2c Strengthened intellectual property laws to protect digital innovations and digitally enabled businesses: Strengthened intellectual property laws and their enforcement ensures that digital innovations and creations are safeguarded, promoting confidence and investment in the digital economy.

5.4.3   Dimension 4.3 Innovation Ecosystem:

The presence of the constellation of key ingredients to drive innovation; such as relevant institutions, incentive mechanisms, investment opportunities and human capital. The Innovation Ecosystem sub-dimension encompasses the support structures necessary for fostering a vibrant digital economy, such as incubators, accelerators, entrepreneurship programs, and innovation hubs, alongside active engagement with regulatory bodies. Major dimensions which should exist include:

4.3a Availability of Incubators and Accelerators (both public and private) in Market: The presence of numerous incubators and accelerators, both public and private, which provide critical support services, mentorship, and resources to nurture start-ups from ideation to maturity. This includes:

4.3b Availability of Entrepreneurship Development Programs in Market (both public and private): Establishment of government-backed hubs and centers that offer space, tools, and networks for developers and fintech start-ups to create and refine their digital products and services.

4.3c Active digital finance and digital service associations established and engaged with market: Active engagement between industry associations and regulatory bodies to ensure that the regulatory environment is conducive to innovation while safeguarding the public interest.

4.3d Active E-Commerce Platform exists in market which includes local vendors The establishment and maintenance of e-commerce platforms that enable businesses to sell goods and services online, expanding their market reach and operational efficiency.

5.4.4 Dimension 4.4 Standards of responsibility:

The adoption of international good practices and standards by business and the financial sector. This could cover digital (e.g. data privacy and protection), social, environmental and governance aspects. Standards play a critical role in ensuring that products, services, and processes meet established quality and safety criteria, facilitating interoperability and trust in the digital marketplace.

4.4a Standards for digital businesses or digital tools to enable business exist: refers to the establishment of guidelines, protocols, and frameworks that govern the operation, interaction, and compatibility of digital businesses or the tools used to facilitate business activities in the digital realm.

5.5   DIGITAL PATHWAY: PEOPLE

The People dimension focuses on empowering the population with the skills and tools needed to thrive in a digital world. This involves widespread digital literacy and skills development programs to ensure that all segments of society can benefit from digital opportunities. For the Caribbean, key priorities are addressing the digital divide, promoting inclusive access to digital technologies, and ensuring that digital transformation efforts are people centred. This pillar emphasizes the importance of preparing the workforce for the digital economy, encouraging citizen engagement in digital life, and using digital tools to preserve and promote cultural heritage.

This section aims to assess advancements in empowering the population with the skills and resources necessary to thrive in the digital era within Caribbean SIDS. Key focal points include the implementation and effectiveness of digital literacy and skills development programs aimed at ensuring broad access to digital opportunities across all segments of society. The self-assessment will prioritize addressing the digital divide, fostering inclusive access to digital technologies, and ensuring that digital transformation initiatives are centred around people's needs. Furthermore, this evaluation will examine efforts to prepare the workforce for the digital economy, promote citizen engagement in digital realms, and utilize digital tools to safeguard and celebrate cultural heritage. Progress will be measured based on the following milestones:

5.5.1   Dimension 5.1 Skills and literacy:

The ability to use digital technology by all parts of society (irrespective of gender, location, age groups, socioeconomic background, disability or other factors), and particularly by disadvantaged groups. The necessary competences include basic skills for using computers and smartphones for everyday tasks, to more advanced skills such as coding, programming or data visualization. This also covers digital transformation's impact on financial literacy which can enable individuals to manage their financial resources effectively. This dimension refers to a specific aspect within a broader framework or strategy that focuses on developing and enhancing the digital skills of individuals or groups within a particular context, such as an organization, community, or society. Digital skills encompass a range of competencies and proficiencies required to effectively use, navigate, and leverage digital technologies and tools in various personal, professional, and societal contexts

5.1a Existence of a National Digital Skills Strategy: These strategies should involve everyone in society and focus on continuous learning. This involves identifying which skills are needed now, like basic digital literacy, and anticipating future needs, especially considering the impact of technologies like AI.

5.1b Digital Literacy Embedded in School Curriculum: Integrating digital literacy and skills into the educational curriculum ensures that upcoming generations are prepared to engage with digital technologies and contribute to the digital economy.

5.5.2   Dimension 5.2 Usage and adoption of Digital Services:

The purposes and the modes of use (i.e. the what and the how) of technology, as well as reflections on the portion of society using any given technology and the levels of usage within different segments of that society. Refers to a specific aspect within a broader framework or strategy aimed at promoting the utilization and integration of digital services by individuals, businesses, or communities. This dimension recognizes the importance of not only having access to digital tools but also ensuring that they are effectively adopted and used to derive maximum benefit.

5.2a Financial sector offers individuals affordable, easy to use financial services: Ensuring that individuals have access to financial accounts, including the marketing and provision of low-tiered KYC (Know Your Customer) 'no frills' accounts to private sector, is essential for inclusive economic participation in the digital age.

5.2b Market makes available a range of digital tools to enable their access to the Digital Economy: Signifies the importance of ensuring that a diverse spectrum of digital tools, encompassing software applications, platforms, and technologies, is readily accessible to individuals and businesses. This aims to democratize access to the digital economy by fostering innovation, competition, and affordability in the market. Efforts are directed towards promoting the availability, affordability, and usability of digital tools, supported by initiatives such as training programs, support mechanisms, and incentives for adoption.

5.5.3   Dimension 5.3 Human Rights:

Recognize and protect digital rights as fundamental human rights, integrating them into the legal framework to uphold the dignity, freedom, and equality of individuals in the digital sphere. Major dimensions which should exist include:

5.3a Legal Framework (or provisions) exist which recognizes and enshrines digital rights as human rights: A legal framework (or legal provisions) should be made that explicitly recognizes and enshrines digital rights within the broader spectrum of human rights, ensuring their protection and enforcement.

5.5.4   Dimension 5.4 Civic engagement:

The impact of technology on individuals' political participation, the diversity of voices participating in open government process, the opportunity for minorities to access information and to participate and propose solutions to community priorities.

5.4a Participation and civic technology: active involvement in online activities to address social and political issues. This includes contributing to discussions, sharing resources, organizing campaigns, and advocating for causes using digital platforms. By leveraging technology, individuals can connect, collaborate, and mobilize online to drive positive social change and promote democratic values.

5.4.b Digital media: forms of content, information, or communication that is created, distributed, and consumed through digital technologies. This includes text, images, audio, video, and interactive multimedia content that can be accessed and shared via the internet or other digital platforms. Digital media encompasses a wide range of channels and formats, such as social media platforms, websites, blogs, online forums, streaming services, mobile apps, and digital publications. It facilitates communication, collaboration, and interaction among individuals and communities, enabling them to express opinions, share perspectives, and participate in various forms of online engagement, including digital civic engagement.

5.5.5   Dimension 5.5 Cultural norms:

Cultural attitudes towards the adoption of technology in a society and the impact of digital technologies on people's wellbeing. This encompasses digital addiction, cyberbullying, racism, violent content and misinformation.

5.5a Digital wellbeing: Digital wellbeing refers to the state of optimal mental and physical health that individuals experience in their interactions with digital technologies and online

environments. It encompasses the balance and harmony achieved through responsible and mindful usage of digital devices, platforms, and services. Digital wellbeing involves managing screen time, fostering healthy relationships with technology, maintaining a sense of privacy and security, and cultivating habits that promote emotional and physical wellness in the digital age. It emphasizes conscious engagement with digital tools to enhance productivity, creativity, social connections, and overall quality of life while mitigating potential negative impacts such as digital addiction, information overload, cyberbullying, and excessive screen time.

5.5.b Trust in technology and institutions: confidence individuals have in the reliability, security, and ethical use of digital tools and platforms provided by various entities, including governments, corporations, and organizations. It involves the belief that these technologies and institutions will function as intended, protect user data and privacy, and adhere to ethical standards. Trust is crucial for widespread adoption of digital technologies and services, as it influences user willingness to engage with digital platforms, share personal information, and rely on digital solutions for various needs. Maintaining and fostering trust requires transparency, accountability, and proactive measures to address concerns related to cybersecurity, data protection, and ethical use of technology.

5.5.c Culture: collective behaviours, values, and practices that arise from interactions with digital technologies and online platforms. It encompasses a diverse range of activities, from social media engagement to online gaming and digital art creation. Digital culture reflects the evolving relationship between humans and technology, shaping and being shaped by the digital landscape. It presents both opportunities for creativity, collaboration, and global connectivity, as well as challenges such as digital divides, misinformation, and privacy concerns.

5.6   BENCHMARKING COUNTRY PROGRESS TOWARDS SIDS 2.0

The SIDS 2.0 initiative, using UNDP Digital Transformation Framework (Nov 2023), stands as an instrument for stakeholders aiming to synchronize endeavours towards achieving inclusive digital transformation, particularly pertinent for Small Island Developing States (SIDS) and the Caribbean region. This structured approach empowers actors to precisely identify, organize, and prioritize initiatives aimed at bolstering national digital progress. Within each facet of the framework, a rich assortment of components awaits consideration, each integral to navigating a country's digital evolution successfully.

Countries should have the opportunity to utilize the specified dimensions as a framework to map their digital transformation journey, aligning each aspect with one of the segmented responses: Basic, Opportunistic, Systematic, Differentiating, or Transformational.

This mapping exercise allows for a comprehensive view of the nation's status and its progress toward achieving the SIDS 2.0 goals. By identifying where they stand across these categories for each dimension, countries can clearly visualize their overall digital readiness and pinpoint areas requiring attention or acceleration. Each dimension's alignment with a segmented response not only demonstrates the country's readiness but also facilitates the development of targeted strategies for advancement. Subsequently, this information can be transposed onto a broader digital readiness framework, presenting an actionable, dimensional analysis of progress that guides nations toward their digital future.

Furthermore, the mapping can serve as a cornerstone for discussions surrounding priorities and potential areas for assistance, as well as help countries understand where on the digital readiness scale they fall (see below), offering a holistic structure capable of harmonizing with other pertinent frameworks. Central to its ethos is the emphasis on prioritizing people and digital inclusion, acknowledging their pivotal roles in shaping identification and prioritization strategies.

	1. BASIC	2. OPPORTUNISTIC	3. SYSTEMATIC	4. DIFFERENTIATING	5. TRANSFORMATIONAL
INFRASTRUCTURE	Limited infrastructure. Access to undersea internet cables.	Growing internet service provider & mobile networks.	Growing connectivity. Limited developer & business ecosystems.	Affordable connectivity. Strong supply chains. Growing tech hubs.	Universal broadband. IoT. Inclusive ecosystems.
GOVERNMENT	Limited capacity	First digital initiatives in siloes. Limited political support.	Shared vision and strategy. Vocally encouraged.	Embedded in decision-making. Codified in administrative acts.	Culture of innovation. Codified in legislation.
REGULATIONS	Limited legal capacity	Regulations support fundamentals.	Initial policies and laws established.	Regulations enable innovation. Transparently online.	Foundations enabled. Regulations integrated.
BUSINESS	Limited digital integration across sectors	Growing technology penetration in key sectors	Cross-sector collaboration. Seed financing.	Digital coordinated across sectors. Venture financing.	Digital industry. Enacting digital responsibility standards
PEOPLE	Limited literacy. Cultural aversion to technology.	Limited digital literacy. Consumption-focused. Deep digital divide.	Growing digital literacy. Production increases. Technology embraced.	High levels of digital literacy. Online financial transactions.	Limited digital divide.

Stages of Digital Readiness in the Caribbean

UNDP'S Digital Readiness Framework & Scale - Chief Digital Office UNDP

This framework facilitates the assessment of inclusive digital transformation across five distinct levels, providing a nuanced understanding of progress within Caribbean states. At the initial level, countries may need help with basic foundations, such as inadequate infrastructure and digital skills, which impede

further advancement. Moving up the ladder, some nations might exhibit progress in isolated aspects of digital transformation, albeit without the necessary strategy guiding their efforts. As countries ascend, they may demonstrate systematic advancements in critical areas like skills development and digital public services, driven by identified priority areas.

At the pinnacle, countries with clear strengths in digital transformation and well-established foundational elements signify a mature stage of development. Ultimately, the highest level denotes countries advancing comprehensively in all facets of digital transformation, underpinned by an integrated and coordinated strategy. Through this multi-tiered approach, UNDP's framework offers a comprehensive tool for evaluating and fostering inclusive digital transformation across the Caribbean region, guiding nations towards sustainable progress in the digital era.

6 FINAL REFLECTIONS ON SIDS 2.0 IN THE CARIBBEAN

Digital transformation is a crucial tool for advancing the development of the Caribbean, introducing fresh opportunities across various sectors with the potential of improving healthcare and education outcomes and reducing the significance of geographical barriers. Introducing frontier technologies is fundamental to address key priorities such as strengthening climate change responses, enhancing public service delivery, and accelerating local innovation ecosystems through data utilization and digital innovation. A robust cybersecurity framework is imperative to safeguard sensitive information, protect critical infrastructure, and ensure the secure and resilient functioning of these digital advancements.

Moreover, digital transformation is a fundamental driver behind the ambitious digital strategies being pursued by SIDS. As Caribbean nations progress beyond the SAMOA Pathway, the integration of digital technology as a catalyst for sustainable development presents an invaluable and promising prospect.

The United Nations Development Programme (UNDP) stands as a supportive partner to Caribbean SIDS in their digital initiatives at national, regional, and international levels. UNDP offers technical expertise, policy guidance, and facilitates the identification and expansion of digital solutions and partnerships. Additionally, UNDP addresses critical skill gaps and priorities through educational and capacity-building initiatives. As stewards of the 17 Sustainable Development Goals, UNDP is committed to ensuring that the digital transformation in the Caribbean is inclusive and equitable, positioning these states as integral participants in the global digital community. With the transition towards Small Island Digital States (SIDS 2.0), the Caribbean holds immense potential for impactful change.

7 Annex 1: Summary table of the five Digital Pathways, Dimensions, and proposed milestones.

Pathway	Dimension	Milestone
1. Infrastructure	1.1 Robust Infrastructure and ICT Networks	1.1a Access to fibreoptic networks
		1.1b Widespread availability of broadband networks
		1.1c Availability of 5G / advanced wireless networks
	1.2 Access Enablers	1.2a Access to a National Data Warehouse
		1.2b Access to public data warehousing / cloud computing
	1.3 Modern Financial Infrastructures	1.3a Modernized payment infrastructures (Real-Time Gross Settlement System, Automatic Clearing House, Card Switch)
		1.3b Digitized Credit Infrastructures (digital credit bureau, collateral registries)
		1.3c Availability of Faster or Instant Payment Systems
	1.4 Digital Platforms	1.4a Interoperability across all infrastructures
		1.4b Established national e-Payment Gateways
		1.4c Open Application Program Interfaces (APIs) Available
	1.5 Digital Identity	1.5a Existence of a Digital ID system
2. Government	2.1 Leadership and Coordination	2.1a Existence of a Digital Transformation Strategy (or similar)
		2.1b Established communication strategy to communicate progress
		2.1c Existence of collaboration MOUs for cross-cutting digital aspects
	2.2 Implementation Capacity and Systems (Core Government Systems)	2.2a Active Digital Government Accounting and Budget System
		2.2b Active Integrated Financial Management System
		2.2c Active Government E-Procurement Platform
		2.2d Human Capital Management
	2.3 Digital Government Services and Platforms	2.3a Self-service / e-government portal established for business registration and services
		2.3b Self-Service / e-government portal for Integrated Tax System
		2.3c Self-service / e-government portal for Government to Person benefits (pension, social welfare)
		2.3d Self-service / e-government portal for election systems
		2.3e Self-service / e-government portal for digital immigration
		2.3f Government to person / business and person / business to government payments digitized
	2.4 Open Data	2.4a Adequate Data Infrastructures (demand, supply, geospatial) exist for Digital Transformation
		2.4b Open Data Initiatives Exist & Data Available
		2.4c Monitoring Framework Implemented for Digital Transformation

3. Regulation	3.1 Cybersecurity	3.1a National Cybersecurity Strategy Established
		3.1b Legal and Regulatory Framework for Cybersecurity Established
		3.1c National Cyber Incident Response Team Operational
	3.2 Competition	3.2a Competition laws and policies updated to govern digital markets
		3.2b Authority(ies) designated to enforce competition laws for digital markets
	3.3 Data and Privacy	3.3a Data Protection Laws and Legislation Exist
		3.3b Designated Data Protection Authority(ies) exist for enforcing data protection laws
	3.4 Digital Financial Technologies	3.4a Regulatory Innovation Facilitator (i.e. Sandbox, Innovation Center, Innovation Hub, Test-and-Learn, etc.) in Market
		3.4b Framework to permit E-Money and Agent Banking aligned to good practices exists
		3.4c Simplified Customer Due Diligence Frameworks Established for inclusive finance
		3.4d Tested digital innovations available in market (QR codes, remote onboarding, etc.)
	3.5 Consumer Protection	3.5a Consumer Protection Regime extends to Digital Market
		3.5b Financial Consumer Protection Framework established and extends to digital finance
		3.5c Entity(ies) clearly designated to manage disputes and complaints pertaining to digital services
4. Business	4.1 Access to Digital Finance and Digitally Enabled Investment	4.1a Financial sector offers low-tier, affordable financial accounts and services to businesses
		4.1b Diverse range of financing options, enabled by innovations in credit scoring and underwriting, available in market
		4.1c Financial sector offers affordable, contactless payment technologies to businesses
	4.2 Digital Businesses	4.2a Programs to register digital businesses or help business adopt digital tools available
		4.2b Incentives / Subsidies available to promote business adoption of digital tools and technologies
		4.2c Strengthened intellectual property laws to protect digital innovations and digitally enabled businesses
	4.3 Innovation Ecosystem	4.3a Availability of Incubators and Accelerators (both public and private) in Market
		4.3b Availability of Entrepreneurship Development Programs in Market (both public and private)
		4.3c Active digital finance and digital service associations established and engaged with market
		4.3d Active E-Commerce Platform exists in market which includes local vendors
	4.4 Standards	4.4a Standards for digital businesses or digital tools to enable business exist
5. People	5.1 Digital Skills	5.1a Existence of a National Digital Skills Strategy
		5.1b Digital Literacy Embedded in School Curriculum

	5.2 Adoption of Digital Services	5.2a Financial sector offers individuals affordable, easy to use financial services
		5.2b Market makes available a range of digital tools to enable their access to the Digital Economy
	5.3 Human Rights	5.3a Legal Framework (or provisions) exist which recognizes and enshrines digital rights as human rights
	5.4. Civic Engagement	5.4.a Participation and civic technology 5.4.b Digital Media
	5.5 Cultural Norms	5.5.a Digital Wellbeing 5.5.b Trust in technology and institutions 5.5.c Culture

8   Annex II: Measuring Progress

While a range of Key Performance Indicators (KPIs) exists to gauge digital transformation against pathways exist, a few select indicators stand out for their immediate relevance and impact. At a future date, Caribbean SIDS 2.0 stakeholders will be requested to support the identification of various indicators to monitor and measure progress. At an early stage, and for reference purposes only, to measure progress made on digital transformation, Caribbean SIDS can look at an initial stage for upward increases and progress in the following areas:

Pathway 1: Infrastructure

Internet Penetration Rate: This measures the percentage of the population with access to the internet, offering a snapshot of digital inclusivity and reach.

> a.   Percentage of coverage for internet connection (both urban and rural)

Percentage of Households with Internet Access: By tracking both urban and rural access, this indicator provides insight into the digital divide within a country.

> b.   Percentage of households with internet access (both urban and rural)

Broadband Speed and Availability: Assessing internet speed and the availability of broadband services across both urban and rural areas highlights disparities in access and quality of service, guiding targeted improvements.

> c.   Speed of average connection
> d.   Cost per capita of average connection.

Pathway 2: Government

E-Government Development Index (EGDI): A composite index measuring the readiness and capacity of national institutions to use ICTs to deliver public services.

Digital Service Adoption Rate: The percentage of government services available online and the rate at which they are used by citizens and businesses.

Citizen Satisfaction Levels: Surveys and feedback mechanisms to assess public satisfaction with digital services.

E-Government Service Adoption: Evaluating how widely digital public services are being used by citizens as a marker of digital engagement and trust.

Average time taken to complete public transactions: This is a quantitative indicator that may be useful to determine how efficiently transactions are processed and the wait times being experienced by the public.

Pathway 3: Regulation

Legislation Update Frequency: The rate at which digital-related laws and regulations are reviewed and updated to keep pace with technological advancements.

Regulatory Quality Index: Evaluations of the effectiveness of digital regulations in promoting innovation while protecting citizens' rights.

Compliance Rates: The degree to which individuals and businesses adhere to digital laws and regulations.

Cybersecurity Index Positioning: Rankings in global cybersecurity indices can measure how well the country or territory is performing in securing its digital infrastructure and information.

Cross-border Data Flow Agreements: The participation in and adherence to regional and international data protection and flow agreements can indicate a SIDS's commitment to ensuring safe and ethical cross-border digital interactions. This could be measured by:
- Number of breaches reported
- Quantity of data exfiltrated
- Types of attacks/breaches reported"

Pathway 4: Business

Innovation Investment Levels: The amount of budget allocated for innovation within the public sector.

Technology Adoption Rate: The rate at which new technologies are implemented in public services and administration.

Public Sector Efficiency Scores: Number and availability of Digital Development Centers and Innovation Centers (or initiatives similar)

Number of Digital Based Registered Businesses: Tracking the number of newly registered businesses, particularly those that are digitally enabled, can show the growth and vibrancy of the entrepreneurial ecosystem.

Access to Financing: Indicators which can make reference to the availability and diversity of financing options for businesses, such as microloans, venture capital, and crowdfunding, can be a key indicator of a healthy business environment.

- % of businesses with access to either a formal business or merchant account
- % of businesses that are able to take digital or online payments
- The number of loans granted, average loan size, and repayment rates
- The %of loans and investment to MSMEs as a % of total portfolio

Innovation Index: The number of patents filed investments in R&D, and regional or global innovation competition wins can serve as indicators of the level of innovation within the business sector.

Digital Skills Among Entrepreneurs: The prevalence of digital skills training programs and their uptake by entrepreneurs can be measured to gauge the digital competency within the business community.

No. of breaches reported: Provides a statistical measure of breaches that have been identified and reported. It is to be noted that the rate of reporting may be impacted by the compliance and regulatory framework that is in place in the territory in question.

Quantity of data exfiltrated: Provides decision makers with a generalised understanding of the quantity of data that has been illegally accessed and transferred out of the organizations.

Types of attacks/breaches reported: This is a highly useful indicator that provides policy makers with information relating to the most prevalent types of attacks and the nature of the breaches that have occurred. This will allow for the development of more targeted interventions.

Pathway 5: People

Digital Literacy Rates: Percentage of individuals with access to digital financial services. This includes:
- Percentage of individuals using e-commerce
- Percentage of individuals using e-government portals
- Percentage of individuals scoring high on digital skills survey

Culture: trust in digital technologies, attitudes towards entrepreneurial risks, social norms for use and ownership of internet and technology.