NATIONAL DIGITAL STRATEGY

2023 - 2030

Acknowledgements

The Government of Suriname would like to thank and acknowledge the extensive input, collaboration, and feedback provided by representatives from the private sector, civil society, and public sector during the course of developing this National Digital Strategy.

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Further information about the process of developing the National Digital Strategy can be found at the end of this document.

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Contents

Foreword

Digital tools and technologies possess enormous potential for supporting and accelerating the development of our country. We have seen this in recent years: from how improved digital financial solutions have made it easier for businesses to reach new customers, to our efforts behind-the-scenes to digitize public services and to begin shaping a digital identity for everyone in Suriname.

With this in mind, we need to make sure that digital works for the benefit of our entire population – and this is becoming increasingly complex. This was made particularly clear during the consultation with key multi-sectoral stakeholders from the private and public sectors - facilitated by e-Government, with the technical support of the United Nations Development Programme - which formed part of the development of this document.

I am excited by the possibilities of digital for our country, and for our people. But we also need to build the protections, safeguards, and other components to mitigate the risks and challenges posed by new technologies and solutions. And we also need to ensure that no one is left behind, or excluded, from the potential that digital could offer.

Ensuring we maximize the potential of digital will require extensive work. From strengthening our foundational digital infrastructure and connectivity, to increasing access to the internet, and delivering high-quality digital public services. We also need to support and foster an environment and ecosystem that is conducive to digital entrepreneurship, creativity, and inclusion. Most importantly, we need to shape digital to achieve the outcomes that matter to our population – including improving healthcare delivery, increasing the yields and productivity of our farmers, and delivering high-quality learning to our young people.

Government cannot do this alone. It is a whole-of-society effort – but also a regional, and international, one. With the opportunity to learn from what has (or has not) worked elsewhere. We can also inform these global discussions and debates on digital and technology – and share our successes with the world. The challenges we face as a society are complex and multifaceted, but we can overcome them, together – and digital can be an important tool.

This focus on outcomes is deliberate. We need to avoid being led solely by technology, or solutions. Alongside the drafting of this strategy, we have been following developments in areas as diverse as artificial intelligence, Web 3.0, and the Fourth Industrial Revolution – each bringing many potential innovations. We need to engage with this constant development of new ideas and technologies and identify what is useful and relevant to our country and context. And recognize what innovations will sustain over the longer-term and can be applied to catalyze the development of Suriname.

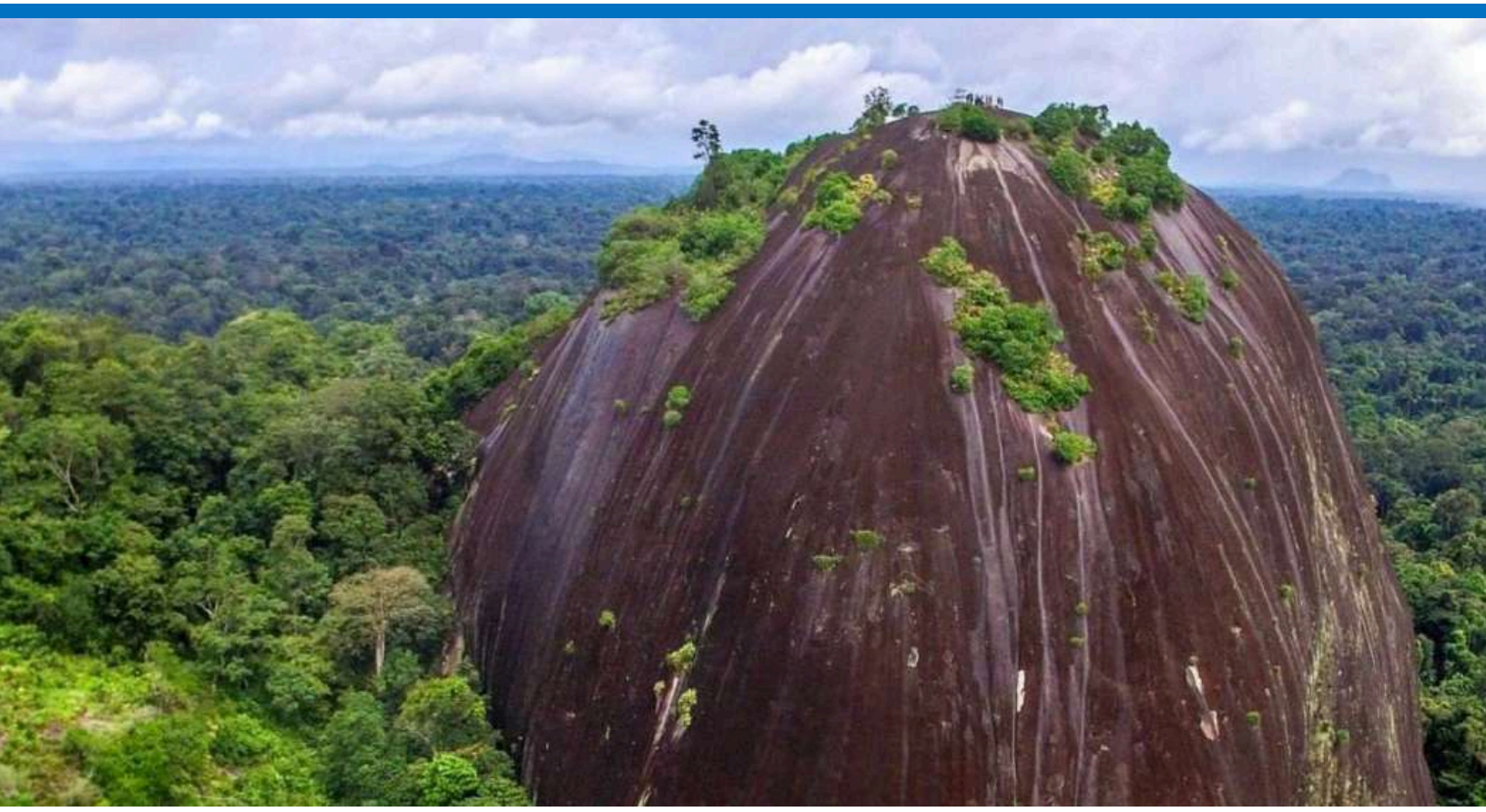
As part of this foresight effort, I also look to you all. The development of this National Digital Strategy has only reaffirmed the exciting, dynamic, and talented digital ecosystem that we have in Suriname – across the private sector, civil society, and within our government. I am continually inspired by the ideas and innovations from across this community. Your capabilities and leadership will be crucial in Suriname identifying new ways to unlock unprecedented avenues for economic growth and for social progress – driven by digital.

With this in mind, I am reminded that technology is often the comparably simpler component of digital transformation. The harder aspect are the efforts required in changing behaviors, mindsets, cultures, and structures to best leverage these new ways of working, learning, and living. And, in doing this, our greatest asset in our digital transformation journey is not digital. It is not hardware, or software. It is our people. The talent, commitment, and engagement of our population is enormous. Digital transformation is a journey, and one that will be shaped, led, and championed by our citizens. And we will work to equip you all with the skills, tools, and expertise to thrive in this digital era – bridging gaps, closing divides, and sharing in the benefits of digital together.

Last but not least, I would like to express my sincere gratitude towards all stakeholders who participated in the process of developing this document - in particular, E-Government and the United Nations Development Programme for spearheading this endeavor.

His Excellency Chandrikapersad Santokhi
President of the Republic of Suriname

Our digital journey to 2030



Digital is transforming lives and livelihoods in Suriname. From digital financial transactions to online and remote learning, digital technologies are shaping how we live, work, and play. Digital is changing our economy, by generating new opportunities and industries. It is shaping how we deliver public services by increasing their scope and scale. And digital technology is changing our society – from the ways in which we communicate, to driving new and exciting opportunities for our creative sectors.

The reach and impact of digital technologies will only continue to increase in the coming years, and it is crucial that all of Suriname is able to leverage the benefits of this innovation – whilst mitigating and tackling the challenges that are associated with such rapid and wide-ranging digital developments. But we are also not starting from scratch. Digital is embedded in all areas of our lives, and we are building upon strong digital assets and digital foundations. This includes our vibrant and dynamic digital private sector.

Digital transformation is a journey and not a destination. It is also a marathon, and not a sprint. Recognising this, Suriname needs to engage with the long-term possibilities of digital– including what they can realise for our country's development, and the achievement of the Sustainable Development Goals by 2030. Many of the actions and activities needed to accelerate digital are also multi-year commitments – from leveraging new types of funding and partnerships, to implementing legislation and protections, and building the skills and mindsets of our population to engage with the potential that digital can offer.

However, this is not a journey for a single organisation or sector. It is a whole-of-country endeavour. Each of us has a role to play in ensuring that digital can position Suriname for the 21st century and beyond. Similarly, this is not a journey that our country faces alone. Every country – and society – around the world is grappling with the role, potential, and impact of digital technologies. We must share our progress and successes with the regional and international community, but also learn and build upon what has been proven and that which is working elsewhere.

With all of this in mind, the Government of Suriname - under the technical lead of the E-Government Department and the Presidential Working Group on E-Government - sets out a vision for digital transformation in Suriname in this National Digital Strategy. By 2030, the country will have shaped:

An accessible, transparent, safe and secure digitally transformative environment, that sustainably enables the prosperity and universal well-being of all citizens of Suriname – based on local and international collaboration.

This vision is premised on ensuring that digital works for everyone in Suriname – that it is *accessible, transparent, safe and secure* – and that no one is left behind. And that digital transformation is not the preserve of a handful of organisations or sectors, but that a *digitally transformative environment* is created to accelerate, strengthen, and amplify the *prosperity and universal well-being* of all citizens of Suriname. This will also be a truly collaborative endeavour. We will leverage the contributions of all parts of Suriname - including digital leaders in the private sector - and our presence in local, regional, and international communities.

This vision is ambitious, but it is also necessary. Achieving it will position our country to embed digital – and its benefits – throughout our economy and society.

From scaling digital payments to support our businesses, to rolling-out digital identity solutions to improve public service delivery, enabling data sharing to drive better healthcare delivery – and improving connectivity and skills to strengthen the skills and education of our population. This vision will also allow us to shape the environment needed to develop new industries and opportunities – from legislation to protect the rights and data of citizens, to shaping digital payment infrastructure for businesses, and creating the digital components and assets that will attract further talent and investment to Suriname.

Strategic priorities

A vision cannot sit in isolation. It can only be achieved through concerted and collaborative effort - founded on key actions and activities. Recognising this, the digital vision for

Suriname is accompanied by the projects, programmes, and initiatives required to ensure that it is delivered. Many of these are already underway. These headline activities are set out through the Strategic Priorities of the National Digital Strategy.

In order to deliver an accessible, transparent, safe and secure digitally transformative environment in Suriname; one that sustainably enables the prosperity and universal well-being of all citizens – based on local and international collaboration; six Strategic Priorities have been identified:

1. **Strengthening digital infrastructure:** to build the strongest possible foundations for the digital transformation of Suriname.
2. **Providing accessible and affordable internet:** to ensure that all individuals, businesses, and organisations can have a high-quality online experience.
3. **Delivering digital identity:** to improve the delivery and functioning of public and private digital services.
4. **Improving access to government services:** allowing citizens to interact with the government at their convenience.
5. **Ensuring hybrid and distance digital learning:** including leveraging digital technologies to improve digital literacy, and shaping an approach to lifelong learning.
6. **Increasing citizen awareness and creating a mindset shift:** to support all citizens in benefitting from the potential of digital technology.

Although separate, each Strategic Priority plays a key role in achieving the overall vision – and with considerable overlap and linkage between each priority. From the role of accessible and affordable internet in improving access to government services, to the importance of hybrid and distance digital learning in making digital transformation tangible and relevant to citizens – and the importance of shaping an essential mindset shift towards our citizens embracing digital.

Similarly, all six priorities are founded on shared conditions and foundations – including participation, collaboration, and shared accountability between sectors; leadership from government, catalysing the private sector, and ensuring that inclusivity is a key driver of digital development in Suriname.

Strengthening digital infrastructure

Digital infrastructure is the foundation of digital transformation – from data registries to improve how public services function, to the importance of shared digital components to improve the effectiveness and efficiency of digital governance in Suriname. The governance of digital infrastructure is also important: how are priorities such as interoperability enabled? More broadly, digital infrastructure must also be sustainable – and see a shift away from a reliance on a small number of vendors, relationships, and grant-based funding.

Suriname has good digital infrastructure foundations, and the government is exploring a wide range of digital public service initiatives although many of these are in the earlier stages of development. However, there is also further potential for continued expansion of e-government

functionalities such as self-service internet applications to improve citizen's access to information and public services.

The government of Suriname has started with digitizing data registries and currently manages a range of digital contracts with vendors and other providers. The country has implemented centralized data center services for more than 80% of governing ministries, is currently rolling-out an Information System For Health (IS4H) initiative to strengthen digitalization in the health sector, and is implementing an e-education platform to drive improved learning outcomes. It has benefited from strong and productive partnerships with the digital private sector in Suriname.

Improving Suriname's digital infrastructure will require a number of key activities. In particular:

- **Enabling efficient and effective customs clearing and import taxation,** to ensure that the country is able to access the latest technologies from around the world – particularly in a context of unreliable international supply chains.
- **Shaping an available and skilled ICT labour force,** able to build and deliver digital public services and their associated components – and demonstrating that working in the digital sector in Suriname is a viable and desirable career pathway.
- **Building collaboration and harmonisation between stakeholders**, recognising that digital transformation is a whole-of-society endeavour and in order to reduce duplication and incompatibility of infrastructure. Continued public-private partnerships will be especially crucial.
- **Ensuring available and useful financing,** to enable sustainable and longer-term digital transformation in Suriname – recognising the sizeable investment required for digital transformation.

Providing affordable and accessible internet

The internet is the utility of the 21st century, but it is not just about the underlying wired and wireless connectivity – whether 3G, 4G, 5G, or full-fibre. Delivering accessible and affordable internet also requires providing a high-quality broadband internet experience, ensuring data and device affordability for the whole population, and guaranteeing the availability and affordability of electricity and other foundations required for the internet.

Suriname has made strong efforts in developing digital infrastructure foundations. The government's liberalisation of the telecommunications sector in 2004 has led to increased mobile and broadband penetration. The landing of the Suriname–Guyana Submarine Cable System in 2010 also improved the affordability and accessibility of connectivity technology. Currently, around 50% of our citizens are daily internet users - whilst 60% have access to the internet. Suriname also launched its own Internet Exchange Point - SUR-IX - in November 2022.

However, progress in developing core infrastructures could be accelerated, especially in comparison to neighbouring countries' investment in newer and more sophisticated connectivity technologies. Suriname scores 0.71 in the 'Telecommunication Infrastructure' component of UN DESA's e-Government Survey (2022). It is also the only country in the region with just one cable landing point

(UNCTAD 2017). In this regard, the planned Deep Blue One Cable that will begin installation in mid-2023 – with an estimated completion date in 2024 – is an important investment.

Ensuring accessible and affordable internet in Suriname will require:

- **Investment capital,** recognising the cost and complexity of delivering high-quality internet access to the entire landmass, and the inclusion of the indigenous and tribal peoples in the digital economy
- **Strengthened infrastructure,** including improving mobile coverage in rural communities, and accelerating the deployment of fibre connectivity in urban and populated areas.
- **Improved legislation,** including clarifying the consumer law for broadband services and improving other procedures – particularly delivery times for broadband connections, and improved consumer protection.

Delivering digital identity

Digital identity is a crucial component in digital transformation – and the digital economy more broadly. This legal identity is often the unique identifier for an individual – or entity – within government and other databases and services, and is an essential aspect in delivering joined-up and effective public and private services. By introducing a standardised digital identifier, individuals and entities can be easily recognised, authenticated, and verified – an essential aspect for the functioning of services.

The Ministry of Home Affairs (BiZa) introduced a unique and standardised digital identifier (e-ID) in 2019. The new e-ID card has a machine-readable zone that stores personal data, including a citizen's e-signature, facial image, and fingerprints. It is intended to be an access key to e-government services – and opens the possibility of verifying online identification for commercial activities.

The latter functionality could be a strong catalyst for the development of e-commerce and broader digital economy services. The widespread availability and adoption of digital identity infrastructure in Suriname could have a transformative impact on the digital economy and the delivery of public and private services, including products and services across the banking sector. The establishment of the Central Credit Bureau in Suriname, as envisioned by BNETS, should benefit considerably from the implementation of digital identity infrastructure.

The e-ID could consolidate lender information and track borrowers' credit history, providing lenders with the information necessary to make informed decisions on creditworthiness – and reducing errors. Similarly, digital identity can also streamline customer onboarding – including reducing the time and resources needed to complete Know Your Customer and Anti-Money Laundering verification checks. The e-ID could serve as a reliable and secure means of verifying customer identity, while also protecting sensitive information and privacy. Customers will enjoy a faster and more convenient experience, while banks can improve their operational efficiency and reduce the risk of fraud and financial crimes.

BiZa's Central Bureau for Civil Affairs (CBB), in collaboration with E-Government, leads the e-ID's operationalisation in Suriname. There are 14 CBB units throughout the country that process e-ID applications – and an e-counter for online applications. Currently, over 350,000 e-IDs have been distributed in Suriname.

Delivering inclusive digital identity in Suriname requires:

- **The widespread availability of e-ID infrastructure,** including software and hardware and centralised systems operating at-scale. This also includes modern procedures and legislation – particularly data protection.
- **Sustainable financing,** notably longer-term and allocated budget to continue the roll-out and uptake of e-ID – including licensing and improved contracts with suppliers.
- **Uptake and adoption** – including improved citizen knowledge of the importance of e-ID, greater awareness of its role in the digital transformation of Suriname, and increased usage of digital ID services.
- **Continued adherence to best practice** - from ensuring multiple verification methods to best-in-class security and other procedures, including data minimisation to protect data privacy and to reduce identity theft.

Improving access to government services

Digital public services are a key part of digital transformation, and often an essential part of making this process 'real' and tangible for citizens. They are a crucial tool in improving the reach, effectiveness, efficiency, and success of government – and allow the public sector to meet and exceed citizen expectations in their interactions with government.

The government is exploring a wide range of digital government and digital public service initiatives. Many of these are in the earlier stages of development, but progress is accelerating. Notable digitised services include the 'Safe City' services (launched in 2018) for security and crime monitoring, the e-Visa and e-Tourism card to streamline travel authorisation processes (launched in 2019), and the above national electronic ID system.

Suriname scores 0.34 in the Online Service Index (UN DESA 2022) –below the global average of 0.56. This is largely attributed to a lack of systematic mechanisms in place to understand and optimise the user experience of government digital services – and reflects broader challenges in monitoring and evaluation processes, as well as gaps in data collection. Similarly, there is room for further expansion of e-government functionalities such as self-service internet applications to improve citizen's access to information and public services.

Improving access to government services entails:

- **Continuing to digitise key services**, including those provided by the Civil Registry Office, driving further improvements in citizen payment processes, and providing opportunities to share and use data.

- **Strengthening key components of digital public service delivery** – from hardware, to software and security. The processes and procedures required to digitise the above (and other) public services.
- **Developing and implementing an interoperability and data exchange framework** – this framework will facilitate secure and reliable data sharing across multiple government institutions and the private sector.
- **Improving citizen awareness and uptake of digital public services**, through greater promotion, improvements in digital literacy, and making services so efficient that citizens will want to use them by 'default'.
- **Ensuring sustainable financing** in order to continue the digitisation and digitalisation process, and to build and embed key service standards and ways of working.

Ensuring hybrid and distance learning

Digital technologies provide an unprecedented opportunity to increase the depth, quality, and reach of education and learning in Suriname. From improving access to information, to embedding global expertise and experience in local education offers. Similarly, the increased availability and accessibility of smartphones and other devices increases the opportunity to deliver engaging and lifelong learning opportunities.

Hybrid and distance learning products and services are founded on digital technologies, and leverage the above devices – and factors such as internet connectivity – to deliver high-quality learning. Suriname is starting this journey with strong foundations. Its adult functional literacy rate and skilled workforce population is high at 94% and 45%, respectively (UNDP HDI 2020). There is also an ambition to implement e-education services in 80% of all universities by 2023. The Suriname National Training Authority is in the process of developing a national qualifications framework together with the country's largest employers and workers' organisations.

The government is also taking important steps to advance efforts. A national qualifications framework for Technical and Vocational Education Training (TVET) has been set up to align skills capacity building efforts with the country's science, technology, engineering, mathematics, and economic priorities – and to develop a core group of digital specialists that could spearhead innovation in various industries (as set out in the Suriname Policy Development Plan 2017-2021).

Broader reforms to the education system are also planned, including considering the role of digital technology in measuring national education outcomes - and focusing on developing the digital literacy of teachers and educators. The government has also been working with the private sector to align technical vocational training programmes with the labour market needs of the economy, and to provide technical training programmes in collaboration with international partners. Opportunities to deliver more advanced technical and digital training opportunities will also prove to be important.

Ensuring hybrid and distance digital learning in Suriname requires:

- **The availability of high-quality learning materials** – including books, resources, platforms, courses, and accreditation in our local languages.
- **Access to devices, equipment, and suitable facilities**, such as smartphones, and financing for devices and equipment (as well as ensuring affordable connectivity for our students) - including collaboration with the private sector.
- **Strengthening our human capital** – from increasing educator skills, to supporting improvements in digital and functional literacy across our population.
- **Improving underlying infrastructure**, including providing accessible and affordable internet and affordable and reliable electricity (and leveraging local infrastructure, including data centers).

Increasing citizen awareness and creating a mindset shift

Digital transformation must be founded on the needs, realities, and aspirations of our citizens. It should be people-centred and driven by participation, engagement, and co-design wherever and whenever possible. Everyone should benefit from the potential that digital offers, and therefore digital transformation must be inclusive – with no one left behind. Digital transformation is a fundamental tool to improve lives and livelihoods.

There is growing digital awareness across society, driven by interest in social media and online content. Similarly, a digital culture is emerging in Suriname – with a growing appetite for digital products and services. Reflecting this, Suriname receives a respectable 'consumer readiness' score in the GSMA Mobile Connectivity Index (2022). However, our population's digital literacy lags behind our more impressive functional literacy.

To ensure digital inclusion, the government will be continuing to make concerted effort to increase digital literacy in mandatory education and to upskill local workers through longer-term focused talent development schemes in vocational education. In addition, more will be done to increase awareness of the potential afforded by digital – as well as to enhance cyber awareness, with efforts shaped by a National Cybersecurity Incident Response team. This will require demonstrating the value of digital through useful and accessible digital public services and interactions, as well as targeted and broader digital literacy efforts, and work to drive the development of a local digital entrepreneurship culture in Suriname.

Increasing citizen awareness and creating a mindset shift needs:

- **Digital champions as role models** to promote digital transformation, and to demonstrate and communicate that digital products and services are safe, reliable, and the best option for many tasks and activities.
- **Collaboration between all stakeholders**, including creating a useful and sustainable policy environment to drive public-private collaboration and the digital efforts of the private sector.

- **Incentives to increase engagement and participation in Suriname's digital economy and society** – driving the uptake and adoption of digital across the country.
- **A digitally-savvy and digitally-literate population**, with the skills and confidence to explore all that digital can offer.

Where we are now

Suriname has made good progress in systematically shaping and driving digital transformation. In particular, the country has built good foundations of digital literacy within and beyond government. This also includes a growing, vibrant, and important digital private sector that is taking shape in the country. Digitalisation efforts across the public sector are also heading in a promising direction.

The government has a strong ambition to position digital at the core of national development. We also benefit from support for digital transformation at the senior political level, and cross-government ownership in defining a technical vision for digital transformation that aligns with Suriname's broader development priorities. There has been similarly useful progress in developing digital public services, but challenges remain in strengthening the technical and organisational capacity of government to deliver on digital priorities. This includes the need for a whole-of-government mandate for digital transformation, which is a driver for this National Digital Strategy.

While digital transformation is considered to be of considerable national importance by many parts of our society, some of our citizens may not be familiar with the government's approach towards digital. Research also highlights interest from key stakeholders in government being 'bolder' in leading digital transformation efforts in the country. This includes an opportunity for to leverage the momentum of accelerated digitalisation driven by the COVID-19 pandemic – as recognised in the COVID-19 Recovery Plan – and to consider the potential of digital as a longer-term tool and priority for Suriname's socio-economic transformation.

We also know that the benefits of digital may not be reaching everyone in Suriname. Although COVID-19 may have increased digital inclusion in Suriname – with positive impacts on women, those with lower education, and across locations - more privileged sections of society (particularly men and urban residents) are more engaged with the potential of digital technology. There are also considerable challenges of digital literacy across the country, particularly amongst women and those living in our more rural areas. This also includes lower rates of technology adoption in these locations, but also more broadly.

Setting a strategic and long-term direction for digitalisation in our country is particularly important. We can also sometimes see a lack of policy continuity – and longer-term funding – in implementing digital programmes. There is also an important need to drive coherence and direction across key digital transformation priorities in Suriname. This includes scope to draw on the learning of other countries, particularly other smaller nations and other countries in the region, and play an even more active role in this broader community of practice.

ICT Vision 2030

The ICT Vision 2030 was launched in 2021 by the ICT-Association of Suriname, and provides a cohesive roadmap – encompassing initiatives already underway, actions and investments we need to take us forward, and areas to be considered to help us identify opportunities into the future. This also includes with regard to developing the local ICT sector. The National Digital Strategy recognises the valuable technical direction provided by this document, and aims to build upon its work and important direction.

Education

Summary

A pressing challenge in the education sector in Suriname is the limited accessibility of education in the interior regions. As our interior is relatively isolated and is accessible only by bus or boat services, it is difficult and time- and resource-intensive to manage the deployment and movement of teachers around the country. These issues are compounded by extreme weather events such as heavy rainfall and flooding. During such periods, our children and teachers in the interior are required to evacuate their homes and seek shelter in the city. Due to capacity issues, this can cause disruptions in education lasting as long as three to four months.

Consequently, a top priority for the education sector in Suriname is to strengthen the provision of education, and ensure that education is accessible to all, no matter what. There are already efforts underway to leverage digital technologies to increase the resilience of the education sector in Suriname. For instance, the Ministry of Education has introduced ICT training programs for all teachers, with the aim of equipping all teachers with the digital skills needed to prepare distance learning plans in case of sudden crisis events. This includes a particular focus on teacher training in programs that are also accessible offline - such as Google Workspace and Google Classrooms - given that the accessibility and reliability of Internet connectivity varies throughout Suriname.

Digital drivers of change

Digital technology is transforming how education can be delivered. In particular:

- In the wake of the COVID-19 pandemic, the normalisation of remote and online learning has been a key trend driving digitalisation in education. Online courses have proliferated in the education technology (or 'EdTech') sector and, more broadly, there is growing enthusiasm in the education sector for 'blended', 'hybrid', or 'flexible' learning solutions where teaching occurs at least partially online. This trend has also led policymakers and international development practitioners to increasingly conceptualise remote learning as a dual solution which can both act as an insurance policy against external shocks to the traditional learning system, but also a way to broaden access to education by extending reach to out-of-school children or providing the means for lifelong learning programs.
- Artificial Intelligence (AI) is also acting as an emerging driver of digital in education through its role in streamlining and personalising education delivery. AI can support decision-making or administrative tasks that would otherwise be carried out by teachers: examples include AI-based grading tools (sometimes referred to as 'robo-grading'). In addition, predictive learning is gaining traction as a means of recommending personalised learning topics and encouraging students to delve deeper into courses of interest. This is illustrated through the development of Learning Experience Platforms which differ from traditional Learning Management Systems in that they offer curated courses to suit learner pace and preference in lieu of having students follow a predefined course curriculum.
- At a deeper level, the adoption of digital technology in education has been driven by the broader need to re-conceptualise 21st century education. Simply transferring traditional teaching mechanisms to a digital platform does not significantly improve learning outcomes. Focus has shifted towards the development of new forms of content or teaching tools which truly enhance learning experiences by re-centring experience and connection in the learning process. As a result, educators and EdTech providers are turning towards initiatives such as 'gamified' learning, which makes education more engaging through interactive mechanisms and can improve motivation through positive competition.
- Finally, the rise of EdTech has driven focus back towards the role of teachers in digital education systems. This is illustrated in the growth of initiatives to equip teachers with the skills needed to thrive in a digitalised environment. Through 'apps' and other tools, teachers can access downloadable teaching and assessment materials and digital training courses. In addition, such platforms allow teachers to upload and document their teaching work; teachers can then view other teachers' portfolios for inspiration or provide each other with feedback. These solutions highlight that while digital solutions are gaining prominence in education, they should be implemented to complement and improve traditional teaching, rather than seeking to entirely replace classroom-based learning.

Implications for Suriname

At present, digital technologies have the most potential to benefit education management. Education management remains largely paper-based. In addition, there is potential to use technologies such as smart screens and e-learning hubs to support distance education and allow teachers to remotely deliver classes across districts. However, a major challenge in developing an education strategy for our country is the complexity of the education sector: each area of Suriname is different, and every school has its own curriculum. As a result, any education solution that is developed must be flexibly designed and easily adaptable to fit the situation on the ground. One example of this is the Ministry of Education's ongoing work on a national Education Management System, which has been built from scratch to allow the flexible linkage of elements as needed by schools and governmental departments throughout the country.

Attitudes towards and familiarity with technology also pose an issue. In particular, there is a growing digital divide between teachers and students. Students are generally more familiar with technology than teachers, and there is significant variation among teachers' perceptions of the uses and benefits of technology - and also variable access to hardware and software. Notably, ICT training for teachers is currently conducted in collaboration with a private sector partner from Suriname cloud services. These and other public-private partnerships may be crucial in catalysing the digital education transformation.

Health

Summary

The adoption of technology across the health sector in Suriname is relatively uneven, with significant variation across different healthcare specialisms. In general, diagnostics specialisms (including laboratories, X-ray specialists, and radiology centres) and pharmaceuticals are digitised to fairly high standards. In contrast, primary and secondary care providers are lagging behind. Primary care providers are only now adopting Electronic Health Record systems following a governmental drive. Many hospitals do not yet have hospital-wide digital systems in place: individual departments often rely on their own systems, and data is oftentimes not shareable across systems. As a result, digital solutions are highly compartmentalised, as departments independently seek solutions from digital vendors.

A major priority for the healthcare sector in Suriname is broadening and streamlining data collection practices. Due to the uneven adoption of technology across the sector, there is currently

a lack of detailed and systematically managed data to support healthcare management. This has led to logistics issues in the past, such as personnel or medicine shortages caused by mismanagement of staffing and stocking information. In addition, a lack of detailed data on medical diagnoses has inhibited healthcare providers' ability to track nationwide trends in health and disease over time, limiting the ability to optimise care structures. More broadly, data is needed to support the long-term development of the national healthcare strategy. As Suriname is now focusing on a broad, preventive, primary care approach to health management, healthcare providers are now spending more time interacting with patients under new healthcare protocols. The implementation and evaluation of this healthcare strategy will ultimately depend on feedback from the field, yet there is little data yet on how these protocols are impacting healthcare provision.

Digital drivers of change

Digital is having an unprecedented impact on healthcare delivery in many countries:

- Changes in the digital healthcare industry are particularly driven by consumer demand, with a core trend being the growing expectation for easy access to readily available, personalised healthcare. This is reflected in the rising popularity of digitally-delivered healthcare solutions such as telehealth visits, at-home monitoring solutions, or online healthcare management. Such technologies offer various benefits in comparison to conventional healthcare provision. For one, digital connectivity can increase the efficiency of healthcare provision and offers an opportunity to extend the reach of health services to traditionally under-served communities.
- This is also leading to a broadening of the patient journey, which is no longer limited to the time spent in clinics and hospitals. To this end, digital solutions can manage the 'before' and 'after' – or perhaps even the 'not at all' – stages of patient consultation. One example of the potential for digital technologies to support patient-first healthcare are integrated health systems. These platforms offer virtual visits, remote monitoring, and digital care management services; they can also leverage Artificial Intelligence (AI) and predictive analytics to better understand and pre-empt patient needs. Such technologies show how digitalisation is working to support the development of comprehensive, accessible, personalised healthcare.
- As the healthcare sector develops in response to patient demands, it is also evolving to be more sensitive to healthcare providers' needs. The increasing demand for care has placed significant strain on healthcare professionals, with many providers reporting stress, burnout, and understaffing issues. These issues have only been intensified by public health emergencies such as the COVID-19 pandemic. As a result, healthcare providers are increasingly turning towards digital solutions that can simplify workflows or automate routine tasks. For example, digitalisation may support hospital management through the analysis of data on admission rates; predictive analytics may then be used to enable accurate staffing and reduce strain on facilities and staff. Similarly, AI has gained prominence for its potential application in precision medicine. By helping to identify the right treatment at the right time for a patient, digital technologies could reduce the strain

on healthcare providers and optimise resource allocation for more effective healthcare management.

- At a broader level, underlying the needs of both healthcare consumers and providers, is the broader trend of 'datafication' in healthcare as new technologies enable the collection – and analysis – of significant amounts of data at lower cost. For example, the real-time data collected by wearable devices has the potential to streamline consultation and diagnosis processes, as it can be utilised by professionals for analysis and monitoring – or can even be analysed by the patient themselves to drive behaviour change and healthier behaviours. However, as healthcare becomes ever-more data-driven, there are two key concerns that must be addressed. Firstly, in order to maximise the utility of data collection, healthcare providers and tech developers must standardise data collection and organisation standards to ensure interoperability between devices or product platforms. In addition, healthcare providers and platform operators will need to place greater focus on cybersecurity and privacy to make sure that sensitive patient data is not compromised (and government will need to shape these protections).

Implications for Suriname

Digital technologies have strong potential to optimise healthcare management in Suriname by facilitating collaboration among healthcare providers. However, the successful digitalisation of healthcare provision will require significant effort to increase digital knowledge and skills among healthcare staff. Unfamiliarity with technology has previously complicated the adoption of digital healthcare solutions: for example, stakeholders have noted that when digital systems were first introduced to hospitals during the COVID-19 pandemic, many staff did not know how to register data in the system.

More broadly, the adoption of digital solutions in health is currently limited by the lack of local healthcare IT expertise in Suriname. There are few companies in the IT sector, and even fewer with expertise in healthcare IT (including data standards, security, and encryption). This poses significant issues in implementation and maintenance, as without adequate local expertise, Suriname will be heavily dependent on international vendors to create or troubleshoot digital healthcare solutions, raising costs significantly.

Public service delivery

Summary

Suriname has been building strong digital foundations to drive public service delivery. These efforts are continuing, with plans for digitalisation of Suriname's civil registry, implementing world-class digital infrastructure such as 'X-Road', strengthening the interoperability of digital systems and processes, and advancing the 'eGovernment as an Institute' initiative to ensure coherence and leadership for digital public service delivery in Suriname. A recently concluded Digital Readiness Assessment undertaken by the United Nations Development Programme found Suriname's state

of digital readiness to be strong - with the country systematically advancing on digital transformation based on identified priorities.

The Government of Suriname has also taken concrete action to improve policy coordination and implementation of e-government reforms. This included the creation, in April 2021, by way of Presidential decree, of a Presidential Working Group on E-government Development (E-PWG), comprising 13 members spanning public and private sector organisations. The E-PWG was mandated to conduct an integral situational analysis of ICT within the government; review the legal and regulatory framework for the delivery of digital public services; and develop protocols, standards and guidelines for digital public services to government, business and citizens.

Digital drivers of change

Digital is reshaping how public services could be delivered:

- From a citizen-facing perspective, digital transformation in public service delivery has been underpinned by the need to design public services for everyone, such that they are accessible at any time, from any place. This is illustrated by the proliferation of official government websites, which offer e-portals for common services and publish government policy or press releases. Similarly, other countries have rolled out service-specific apps – examples include apps for public libraries, parks, or public healthcare – through which citizens can access information or complete other actions such as making and managing bookings, reporting faults or issues, and sharing feedback.
- In their most ambitious form, e-public service initiatives have taken the form of digital platforms. Not only do these platforms encompass the core functions of information and e-service provision across all aspects of government; they also collate and analyse user information to provide personalised digital services to citizens – often at key 'moments of life'. Digital public service delivery is therefore increasingly underpinned by the need to not only increase user accessibility but also, at a deeper level, to reduce the distance between citizens and government.
- The use of Artificial Intelligence (AI) and automation are major trends driving digital transformation in public services due to the potential of such technologies to increase efficiency, both within and across functions, departments, and ministries. Intelligent automation has been particularly valuable in areas where public services have traditionally been delivered through face-to-face interaction, such as healthcare, social services, social security, and border services. For instance, countries have experimented with the use of chatbots to fulfil routine functions traditionally carried out by staff, allowing the reallocation

of human resources to more complex issue areas. It has also become increasingly common for governments to digitalise administrative functions such as tax assessment, procurement, or payments. Using digital portals not only reduces the time spent on data processing by eliminating paperwork; it can also enhance interagency collaboration through database integration. For example, some countries can pre-emptively issue birth certificates – ahead of new parents filling in birth registration forms – because they can access information on new births directly from healthcare systems.

- More broadly, digital transformation in the public sector is – and must continue to be – underpinned by a strong sense of citizen-government trust. As governments expand service provision, they must ensure high levels of transparency and security if citizens are to feel confident and comfortable using these services. This could include the role of technology in improving transparency – for example, leveraging digital tools to make data and information more available. It could also include new types of 'digital democracy': empowering citizens to share their concerns and beliefs or take part in local decisions through digital platforms.

Implications for Suriname

The role and extent of digital public service delivery will only increase. As our citizens increase their digital skills, and continue to get online, they deserve the highest-quality public services. We want citizens to choose digital public services 'by default' - by making them the most useful channel for the population. Suriname has made good progress in this area - including through the launch of the Gov.sr portal - but more needs to be done. This will also include improving the broader digital citizen experience - including cybersecurity knowledge and behaviours.

In particular, the government will be focusing on building and strengthening underlying digital components and infrastructure to ensure the best possible experience for citizens interacting with governments. Comparative analyses on countries that have closed the digital capacity gap and improved their global e-government rankings emphasise the importance of convergence on digital solutions and infrastructure across departments and agencies.

Financial payments and financial inclusion

Summary

Suriname has strong foundations in digital financial payments technologies. There is a robust interbank network for ATMs and Point-of-Sale (PoS) transactions, supported by BNETS and operational 24/7. Over 1.5 million PoS transactions are processed each month in Suriname. In addition, most banks have internet banking and a number have mobile apps. Non-bank digital payment apps - such as mobile wallets – have also come to market in recent years. These developments allow citizens to easily make user-to-user payments or QR code-based payments to merchants and other users. Important efforts have been made in improving overall financial inclusion - as highlighted in our Economic Reform plan.

Nonetheless, there remains significant room for further adoption of digital payments technologies - and increased inclusion through leveraging digital products and services. Suriname continues to have a strong cash-based culture, though there have been considerable increases in the number of digital payments made and the overall transaction volume. In addition, due to a lack of real-time integration and settlement mechanisms between merchants and counterparties, online payments are not yet available for all merchants. There is also room for improvement in credit card acquiring services. While our local banks do issue credit cards, few are 'acquirers' for international services such as Mastercard or Visa. This highlights a greater need for acquiring services for international credit cards, which can make digital payments more accessible to tourists.

Digital drivers of change

Digital technologies are having a particular impact on the financial and financial payments sector around the world. Notably:

- Against the backdrop of the COVID-19 pandemic, one of the major drivers of change in the financial payments sector has been the rapid increase in uptake of mobile banking and digital payment solutions. This includes browser-based or in-app online purchases, in-store mobile-based payment, and person-to-person payments. Currently, online and mobile platforms remain dominated by major Big Tech providers – such as Apple Pay and Google Pay – with bank-provided mobile wallets starting to gain traction. However, there is potential for mobile banks to find their niche, as one-size-fits-all solutions are often exclusive of marginalised or non-traditional consumers.
- At a broader, system-wide level, the financial payments sector is experiencing significant disruption from emerging technologies. Artificial Intelligence has driven significant change due to its ability to augment and replicate human analysis and decision-making capabilities and has gained further prevalence in the sector by fulfilling functions such as data analysis, fraud detection, and risk factor modelling.
- Digital technologies are also driving developments in collaboration, from cross-border payments to the rise of 'open banking'. The latter provides institutions with an opportunity to access a single, cohesive pool of data from a range of financial products and services. This could unify financial services, but also improve the consumer experience by increasing the number, quality, and relevance of services that consumers can access. Many financial institutions are investing in open banking management platforms.

Implications for Suriname

Digital technologies are having a positive influence on Suriname's financial payments ecosystem, but there is still potential to broaden this impact. Strong progress is already being made to streamline payments processing: for instance, BNETS is playing a leading role in integrating online merchant services with banks' payment platforms, and the organisation is also starting the implementation of international credit card acquisition schemes across its ATM and PoS networks.

However, there are a few key challenges that further digital transformation in the financial payments sector may face. Firstly, hesitancy to make and receive online payments - either due to a lack of familiarity or lack of digital capabilities - remains an issue, and must be mitigated through

awareness and educational programmes. In addition, the widespread adoption of digital payments technologies requires reliable and accessible connectivity which is especially lacking in the interior of our country. Finally, the development of a robust digital payments ecosystem will require strong policy foundations. This includes adequate regulatory oversight that safeguards systems without stifling innovation, as well as broader moves to increase financial inclusion across our population.

Agriculture

Summary

A current major priority for the agricultural sector in Suriname is the upcoming sixth National Census of Agriculture. The census will be conducted by the Ministry of Agriculture, with technical support from the UN Food and Agriculture Organization (FAO). Notably, the upcoming census will be the first time that it has been conducted entirely digitally. One of the main innovations introduced to support this process is the use of computer-assisted personal interviewing techniques. In previous iterations of the census, interviewers relied entirely on pen-and-paper interviewing techniques.

More broadly, the digitalisation of the agriculture census is part of a wider drive to increase digital capabilities in the agricultural sector. Previously, representatives from central and local governments have attended training on geospatial technologies and drone usage to improve agricultural disaster risk management (and to drive broader sustainable agriculture in Suriname). However, there are gaps in institutional capacity, data and information systems; limited technical capacity, and a lack of finance to drive digital explorations in the agricultural sector in Suriname.

Digital drivers of change

'Precision agriculture' – agriculture founded on the use of data and digital - is emerging in a number of countries:

- It is becoming increasingly common for farmers in some countries to use digital technologies to increase the efficiency of farming through automated or smart management processes. One example of this is the use of automated vehicles to carry out routine tasks such as sowing seeds, removing weeds, watering crops, applying fertilisers, and picking produce. Another technology that is gaining traction is the use of aerial imaging devices, such as drones or low-earth orbit satellites, to monitor fields and gather data on information ranging from water saturation levels to biomass and the presence of pests or weeds. This data can then be analysed using geographic information system

technology to better understand the efficacy of farming plans, their effects on crop health, and the environmental impacts of farming. However, many of these technologies remain unaffordable or otherwise inaccessible to smallholder farmers or those in lower-income countries.

- Artificial Intelligence (AI) is also a major driver of this emerging type of 'smart' farming. Analytics can be used to predict the yield and quality of agricultural outputs based on existing data and may also be applied to optimise farming plans through predicting changes in environmental factors (such as temperature, humidity, and rainfall). The intelligent decision-making capabilities of machine learning can also be used to supplement or replace costly, and potentially inaccurate, human decision-making processes. For instance, AI models can be trained to recognise different species of plant and common crop infections and diseases, thereby allowing them to support common agricultural trouble-shooting issues like weed removal and disease treatment.
- Another key digital trend in agriculture is the Internet-of-Things. Farmers could use sensors to monitor key variables – such as chemical balances, nutrient levels, and moisture content – and be informed of any necessary interventions in real-time. Sensor networks may also be used to automatically ensure optimum conditions without human intervention. Aside from facilitating more efficient resource management processes, the use of smart sensor networks can also contribute to the longer-term development of more sustainable agriculture by maximising and stabilising agricultural output and reducing wastage. In addition, data collected from sensors may be applied to facilitate progress in other issue areas. For instance, data on optimal temperature, water, and humidity levels may be transferred to improve indoor vertical farming processes and controlled-environment agriculture. Farmers could also share data with each other to share knowledge and best practices on techniques to improve output, soil health, and biodiversity outcomes.

Implications for Suriname

One of the major challenges facing the agricultural sector in Suriname is the geographical dispersion of our population. Digital technologies have strong potential to mitigate this issue. For instance, satellite imagery or geolocation techniques may be used to map out farm locations and build a national farm registry, which may then be used to locate and engage farmers in future surveys or censuses. Such an e-transformation could enable the government to better understand and respond to the needs of farmers, contributing to dynamic and inclusive growth in the agriculture sector. By allowing the government to gain a more comprehensive view of farmers' views and concerns, it could also allow the government to construct strategies to support the longer-term development of Surinamese agriculture.

There is also a further opportunity for the government to increase the application of digital technologies in planning, data collection, and data analysis. Further digitalisation has strong potential to support and significantly improve administration and policymaking. However, the potential for broader digitalisation in the agricultural sector - beyond the Ministry of Agriculture - may currently be limited by the emerging digital capabilities of the farming communities. The

successful digitalisation of agriculture will require not only the implementation of digital solutions, but also that farmers are willing and able to use these technologies for sustained periods of time. This includes ensuring that these tools and technologies are affordable, and accessible, to farmers.

Oil and gas

Summary

The major overarching priority for the oil and gas sector in Suriname is the development of offshore oil reserves. While there have been recent major oil finds, production is dependent on an impending assessment decision from international oil companies. Overall, the situation seems promising, with the first oil production expected to begin in the near-future. Offshore oil reserve development is highly technology intensive, and involves different technologies across different stages of the value chain. During the exploration phase, large amounts of data must be gathered and processed to assess the location and quantity of oil reserves. This generally involves expensive software developed by international companies, which can be used to interpret data and model the underground. In comparison, production and refinery phase technologies are largely operational in nature, though still data-intensive.

At present, the oil and gas sector is dependent on international expertise. Local capabilities are still in an emergent phase of development: while some functions (for example, dashboards) are localised, the potential for local content is limited by the small size of the IT community in Suriname. Moreover, the expertise needed for oil and gas-related IT is highly specialised, as the industry relies on more specialised forms of data management and analytics. Consequently, much of the data processing involved in production happens in collaboration with international knowledge or commercial partners. As a result, an underlying priority is to stimulate local oil and gas companies to further capacity building efforts, while encouraging international oil companies to consider local partners before purchasing services from outside of our country.

Digital drivers of change

Digital is having considerable impact in the oil and gas sector around the world:

- One of the key themes driving digital progress in the industry is the need to increase operational efficiency while lowering the risk of dangerous – and costly – human errors. This need is most directly reflected in the adoption of automated processes to ensure safety. For example, using tools such as digital torque checkers to test and provide accurate digital readings for the equipment used on-site – thereby reducing both the amount of time spent on testing and the risk of errors and safety-related incidents. In addition, companies are

increasingly leveraging sensor networks and Internet-of-Things (IoT) technologies to support the management and maintenance of their assets. This allows them to monitor equipment condition and performance in real-time, identify faulty equipment quickly, and intelligently schedule repairs in a way that minimises operational downtime. Furthermore, several actors in the industry are also exploring robot-as-a-service solutions wherein robots can replace humans working in harsh environments.

- Artificial Intelligence (AI) and Big Data analytics are also gaining prominence in the oil and gas industry as a means of optimising operational performance. For one, AI can be used alongside sensor and virtual and augmented reality technologies to support 3D-modelling processes by simulating proposed new offshore or sub-surface developments. This supports structural design as well as risk identification, quantification, and mitigation, thereby allowing oil and gas operators to optimise drilling and construction processes. AI-powered chatbots can also be leveraged to support operations along the oil and gas value chain by helping operators to quickly solve common problems related to oil and gas technologies and operations.
- More broadly, AI and Big Data analytics can also draw production and performance insights from historical data of field operations which can then be leveraged to reduce operational costs, or to support the energy transition by reducing carbon emissions. It is also worth noting that as a side effect of the growing role of data in improving operations, oil and gas companies are turning towards cloud computing for improved data storage and security. This trend has the potential to produce positive feedback loops in digital transformation efforts, as cloud computing offers a strong platform for AI and IoT.

Implications for Suriname

The future of digital in the oil and gas sector will be heavily data-centric. Digital solutions that can assist with data gathering, data management, and data analysis, such as advanced data analytics tools and AI have considerable potential to benefit the development of the sector and can assist with the future development of data lakes, data warehouses, and other data management tools to drive exploration, discovery, and management of oil and gas resources.

At present, it appears that digital transformation in the oil and gas industry in Suriname is likely to be primarily driven by private sector actors. Financial incentives present a strong motivating force for stakeholders in the private sector to invest in infrastructure and technical capabilities. Moreover, to the extent that international oil companies already invest in these capabilities globally, the need to explore and develop Suriname's oil reserves will inevitably drive digital transformation in Suriname. However, this does not mean that digital transformation is solely the private sector's responsibility. On the contrary, the government may play a crucial role in encouraging private sector actors to see the potential of digital transformation, and to make the necessary investments.

How we are going to get there

The journey of digital transformation is not necessarily simple or linear. Similarly, although it leads to efficiency, improved public service delivery, and wide-ranging benefits, it requires significant up-front and longer-term effort. This includes a range of shared and broader priorities – including those that cut across the above six strategic priorities. For example, changes to legislation, increased and longer-term funding, improvements in the affordability and accessibility of digital devices and data, increased adoption of digital products and services, and also improvements in digital literacy.

Our roadmap

In addition to the above wider developments, there are a number of key actions and activities required to deliver the strategic priorities for digital transformation in Suriname – and to achieve the overarching vision of an accessible, transparent, safe and secure digitally transformative

environment; one that sustainably enables the prosperity and universal well-being of all citizens of Suriname – based on local and international collaboration.

Short-term priorities: 2023-2025

Extensive research, analysis, and discussion has highlighted a number of crucial near-term priorities and foundations needed for digital transformation in Suriname.

- **Strengthening digital infrastructure:** to build the strongest foundations for the digital transformation of Suriname. Key projects underway include centralising data centres and increasing banking and payments infrastructure. Further and related actions and activities are:
    a. Mapping digital infrastructure gaps and constraints, including resources and stakeholder collaboration required.
    b. Beginning the process of tackling the above gaps and constraints – building on existing projects underway.
    c. Identifying opportunities to leverage existing or other partnerships to upskill public servants.[1]
- **Providing accessible and affordable internet:** to ensure that all individuals, businesses, and organisations can have a high-quality online experience. Key projects underway include full-fibre rollout and increasing the numbers of public Wi-Fi hotspots. Nearer-term priorities are to:
    a. Identify opportunities to 'zero-rate' digital public services, in order to increase usage of key sources of information and support.
    b. Map connectivity gaps across Suriname.
    c. Identify legislative and other priorities to accelerate the rollout of accessible and affordable internet.
- **Delivering digital identity:** to improve the delivery and functioning of public and private digital services. Key projects underway include further refinements to the e-ID card – and enshrining necessary legislation. Priorities are to:
    a. Finalise e-Card reading infrastructure, including rollout to more of the population.
    b. Begin implementation of the public key infrastructure, to future-proof Suriname's e-ID.
    c. Begin development of a national e-registry, to ensure the availability of a canonical data source.

[1] For example, there is existing cooperation between AdeKUS (Anton de Kom Universiteit van Suriname) and the Silesian University of Technology in Poland - whilst cooperation with other regional or global universities could be a cost-effective approach to building skills and capacities. This could be through shorter expert-led courses, or through shaping a more comprehensive programme to build expertise over the longer-term.

d. Integration of e-ID with financial initiatives such as the Central Credit Bureau Suriname, and smoother onboarding of banks' customers

e. Continue the rollout of the Suriname e-Passport.

f. Developing an enabling environment to embed and scale digital identity in Suriname – including developing or strengthening the Privacy and Data Protection Act, Digital Transaction Act, e-Government legislation; and interoperability and data sharing legislation.

g. Strengthen databases, including digitising key data sources.

- **Improving access to government services:** allowing citizens to interact with the government at their convenience. Key projects underway include digitising of key government databases and ensuring institutional continuity for digital government. Priorities are:

    a. Building sustainable digital databases for all government departments, including a secure and reliable interoperability framework implementation, and ensuring funding for all necessary hardware and software.

    b. Developing a progression pathway for public sector digital professionals, including clear progression opportunities and transparent pay-scales.

    c. Upskilling ICT personnel, particularly in the areas of cybersecurity, network management, database systems management, network applications management, and telecommunication infrastructure expertise – including in collaboration with local, regional, and global learning institutes (through shorter and longer-term courses).

- **Ensuring hybrid and distance digital learning:** including leveraging digital technologies to improve digital literacy, and lifelong learning. Key projects underway include developing a major education management information system. Building on this progress, more immediate priorities are to:

    a. Map the digital engagement of students and teachers, in order to strengthen digital education offer.

    b. Begin work on digital database design, to support policy efforts to improve student learning outcomes.

    c. Map existing partnerships and learning offers from regional and other universities, to identify broader opportunities to develop digital talent.

- **Increasing citizen awareness and creating a mindset shift:** to support all citizens in benefitting from the potential of digital, building on the wide-range of focused projects from the ICT Association of Suriname to create digital awareness within the population. More immediate priorities are to:

a. Shape a national digital curriculum, including developing content in local languages, shaping a digital learning pilot, and building training infrastructure – from training trainers, to onboarding delivery partners.

b. Develop cybersecurity expertise across the population, from technical skills within government to broader awareness and understanding of safe digital and online behaviours amongst our citizens.

c. Implementation of a National Cybersecurity Incident Response team which will provide guidance and support to citizens on cyber safety.

d. Develop materials in local languages to improve the uptake and adoption of existing, and planned, digital services.

e. Identify hardware funding requirements.

Medium-term priorities: 2025-2027

Building on the above progress, additional actions and activities will also be required in the medium-term.

- **Strengthening digital infrastructure:**
    a. Improving the digital procurement process to drive greater transparency, and to improve potential for the government to be a 'customer' for local digital product and service vendors.
    b. Identifying additional legislative priorities to strengthen digital infrastructure.
    c. Deepening regional partnerships with fellow Caribbean nations, and working towards regional harmonisation of ICT standards and regulations.
- **Providing accessible and affordable internet:**
    a. Developing a connectivity strategy, including template agreements, the further expansion of public Wi-Fi hotspots, and expanding the affordability of data pricing and bundles.
    b. Identifying pilot opportunities to improve affordability of connectivity through new technologies and partnerships – including potentially low-earth orbit satellite partners.
- **Delivering digital identity:**
    a. The full implementation of our e-registry.
    b. Enabling data sharing with the private sector, to drive private-sector service delivery.
- **Improving access to government services:**

a. Identifying 'exemplar' services to provide an opportunity to embed digital processes, standards (including monitoring and evaluation), and to build delivery skills within the civil service.

b. Digitalisation of all government departments underway, with a target of 25% of departments fully-digitised by 2027.

c. Fully embedded professional pathways for public sector digital professionals – from trainee to senior staff. Including leveraging expertise from universities abroad to upskill civil servants – and supporting national ICT personnel to undertake training in overseas facilities.

- **Ensuring hybrid and distance digital learning:**

  a. Exploring the scope to sponsor scholarships for graduating students to undertake relevant Master's degrees abroad, if students commit to return to Suriname for an agreed period of time to develop the local ICT sector.

  b. Aligning the role of the government's 'Centres of Excellence' in facilitating digital knowledge transfer to the broader public.

- **Increasing citizen awareness and creating a mindset shift:**

  a. Beginning pilots of digital education in teacher training curriculums, in order to upskill the next generation of teachers.

  b. Improving cybersecurity awareness across the population, including enshrining cybersecurity framework into legislation.

  c. Increasing ICT awareness and engagement in mainstream education.

Longer-term priorities: 2027-2030

The government will be taking an agile and dynamic approach to shaping the digital transformation of Suriname. With this in mind, many of the above actions and activities will drive new opportunities – and new priorities – that will be explored as our digital journey evolves. The later stages of our roadmap would engage with these emerging aspects, but also centre around three broad areas.

First, will be exploring a more regional digital approach – building on the above planned efforts to support regional harmonisation of ICT standards and regulations. From establishing longer-term skills and training collaborations with international partners, to shaping a regional approach to core priorities such as financial services. This could include enabling seamless transactions for citizens within neighbouring countries, but also across the Caribbean. And exploring the interplay between the offline and online worlds in our region. For example, our future physical bridge between Suriname and Guyana could catalyse digital financial transactions and digital trade along this route – driving benefits for both countries.

Second, is identifying and advancing economies of scale. Given our small population, it will be crucial to explore opportunities for increasing the efficiency and effectiveness of digital – including approaches such as centralisation in the digital financial sector.

Similarly, the later years of the implementation of this strategy will be able to leverage earlier learning and successes in shaping legislative frameworks and a broader enabling environment – defining a unique approach to digital transformation that supports the development of Suriname.

Finally, and related, is ensuring that digital continues to support the lives and livelihoods of our citizens – and that it has a positive impact.

This will include identifying new and exciting skills and opportunities, but also addressing and mitigating the risks and challenges posed as digital continues to develop at unprecedented pace. Being alert to these opportunities and considerations will be crucial in ensuring that we shape an accessible, transparent, safe and secure digitally transformative environment – one that sustainably enables the prosperity and universal well-being of all citizens of Suriname, based on local and international collaboration.

The Importance of partnership

As set out in the overarching vision for the digital transformation of Suriname, local and international collaboration will be key assets. This includes key roles for government, the private sector, and civil society – and extensive collaboration across and between sectors.

Government

The Government of Suriname is committed to driving and enabling digital transformation in the country. We will be focused on developing regulation, legislation, and shaping collaborations and partnerships to build a digitally transformative environment in Suriname. We are also committed to ensuring the safety and security of all of our citizens, and will be leading efforts to improve digital literacy, cybersecurity, and to shape a positive and inclusive digital culture in Suriname.

Private sector

The dynamic private sector in Suriname is a key catalyst for our national digital transformation. This builds on the successful digital efforts already undertaken by our businesses across the country–- from developing and implementing digital payment infrastructure, to the role of our local IT sector in providing digital guidance to key parts of our economy and society, and how our traders are engaging with digital payments and digital platforms. Going forward, the digital products and services developed by the private sector will be crucial in building a digital culture and mindset shift in Suriname–- and in improving the lives and livelihoods of all citizens.

Civil society

Our digital transformation must be a whole-of-society effort, with no individual or community excluded from the potential that digital can offer. Our vibrant civil society will be a powerful force in ensuring that all voices are heard during the process of advancing our digital efforts–- whilst many of our civil society organisations will also be important delivery and implementation partners. This includes their expertise and experience in leveraging digital tools for key priorities–- such as delivering healthcare to rural parts of Suriname.

Governance

Digital transformation is a national and development imperative for Suriname. Recognising this, digital transformation will continue to be led and managed at the highest levels of our government.

In April 2021, by way of Presidential decree, the President of Suriname established a Presidential Working Group on E-government Development, comprising 13 members spanning public and private sector organisations from across Suriname.

The E-Government Unit's continued leadership in this area, along with its responsibility for implementing the National Digital Strategy in its entirety, highlights the need for establishing an independent eGovernment Institute. To solidify its independence, it is necessary to put in place legislation that formally recognizes and supports the institute's autonomy. This legislation would provide a legal framework that ensures the institute's independence and provides a whole-of-society mandate to fulfil its crucial role in implementing the digital strategy and driving the broader digital transformation of Suriname.

However, the success of this National Digital Strategy–- and the progress of digital transformation in Suriname–- cannot be the responsibility of a single team, institution, or sector. This must truly be a whole-of-society, multi-sectoral, and collaborative effort. All industries, organisations, and groups are key partners in our digital transformation journey–- and will have shared accountability for our national success. This includes our citizens–- who are essential partners, supporters, beneficiaries, and advocates for digital products, services, and digital initiatives in Suriname.

Identifying success

Our digital transformation journey is a marathon and not a sprint. It also requires that we engage with the evolution of digital and technology – which is changing at unprecedented pace. The below metrics aim to provide an understanding of where our digital strategy is succeeding – and where course-correction, or further efforts, could have even greater benefits for our citizens.

Monitoring, learning, and evaluation framework

The below framework is centred around our six strategic priorities, and also aligned with the ICT Vision 2030. It is not a replacement for project-, programme-, or organisational or ministerial measurement. Instead, it aims to provide relevant metrics to guide policy and delivery teams in ensuring digital transformation meets the key priorities that were identified during the process of developing our National Digital Strategy.

Strategic priority	Indicator	Target date	Source
Strengthening digital infrastructure	Digital infrastructure mapping completed	2025	Strategy
	Digital infrastructure strategy or roadmap developed	2025	Strategy
	Public sector digital skills approach developed	2025	Strategy

Strategic priority	Indicator	Target date	Source
	'Government-as-a-customer' strategy developed	2027	Strategy
	At least two regional partnerships with other Caribbean countries agreed, to drive regional ICT harmonisation	2030	Strategy
Providing accessible and affordable internet	Confirm feasibility to 'zero-rate' digital public services	2025	Strategy
	Connectivity gaps mapped across the country	2025	Strategy
	Identify legislative and other priorities to accelerate the rollout of accessible and affordable internet	2025	Strategy
	At least 80% of the households in the populated districts (Paramaribo, Wanica and Nickerie) should have access to internet broadband services and at least 60% of the households in the rural area districts (Coronie, Saramacca, Commewijne, Marowijne, Para, Brokopondo, Sipaliwini) should have access to internet broadband services.	2025	ICT Vision
	Targeted strategy implemented to tackle remaining 'not-spots'	2027	Strategy
	At least 95% of the households in the populated districts should have access to internet broadband services and at least 75% of the households in the rural area districts should have access to internet broadband services.	2030	ICT Vision
Delivering digital identity	e-Card reading infrastructure finalised	2025	Strategy
	Public key infrastructure implemented	2025	Strategy
	Shape enabling environment–- including developing or strengthening the Privacy and Data Protection Act, Digital Transaction Act, e-Government legislation; and interoperability and data sharing legislation	2025	Strategy
	Begin integration of e-ID with Central Credit Bureau	2025	Strategy
	Full implementation of e-registry	2027	Strategy
	Nationwide coverage of e-ID	2030	Strategy
Improving access to government services	Digital career progression pathway developed for public sector	2025	Strategy
	Cybersecurity skills framework developed and implemented	2025	Strategy
	Funding secured for database hardware and software	2025	Strategy
	25% of government departments fully digitised	2027	Strategy
	National access and use of e-Services with market penetration of 70%	2030	ICT Vision
	Student and teacher digital literacy mapped	2025	Strategy

Strategic priority	Indicator	Target date	Source
Ensuring hybrid and distance learning	Digital database design completed	2025	Strategy
	Opportunities for regional and international university collaboration identified	2025	Strategy
Increasing citizen awareness and creating a mindset shift	National Digital Curriculum developed	2025	Strategy
	Cybersecurity campaign delivered across the country	2025	Strategy
	Hardware and funding requirements identified for broader citizen engagement	2025	Strategy
	National Digital Curriculum begins implementation	2027	Strategy

A shared and important journey

Digital transformation is not an end-point in itself. It is a constant and continual process of exploring and integrating new tools, innovations, and approaches in order to fundamentally and positively change how we live, work, and play. It is a whole-of-society effort, one that requires collaboration between all sectors and communities and one where no one should be excluded or left behind.

However, the extent of these actions and activities is considerable. From the very real physical and logistical challenges of rolling-out digital infrastructure, to demonstrating the power and potential of digital to drive a mindset shift across our population. Our digital transformation journey is a significant undertaking, and one that requires direction and coherence. We hope that this National Digital Strategy will provide this framing. We have not aimed for this document to be comprehensive, recognising that digital developments can be unpredictable. However, the digital vision for Suriname, and the digital priorities for the country, both developed by our community – and set out in this document – will provide us with a guide to navigate this journey.

How the strategy was developed

This National Digital Strategy has been founded on an extensive and participatory process. This began with the Government of Suriname undertaking a Digital Readiness Assessment facilitated by the United Nations Development Programme (UNDP). Amongst other recommendations, the assessment identified the importance of building on the ICT Vision 2030 and shaping a broader approach to the role of digital in the development of Suriname.

Recognising this recommendation, the Government of Suriname organised a multi-day workshop in November 2022 - facilitated by eGov and UNDP - to shape a vision for digital in Suriname, and to identify key guiding principles to inform digital transformation. The workshop drew on perspectives and expertise from more than 30 participants from across the public and private sectors, and civil society. These discussions were also complemented by individual and group discussions with key experts and stakeholders in Suriname, in order to provide a wide-range of input into the shaping of the National Digital Strategy.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