Digitalization main challenge for policy makers: how to think across boxes

A motion for policy makers to build a resilient and sustainable economy by harnessing the digital momentum sparked by the pandemic

Whitepaper

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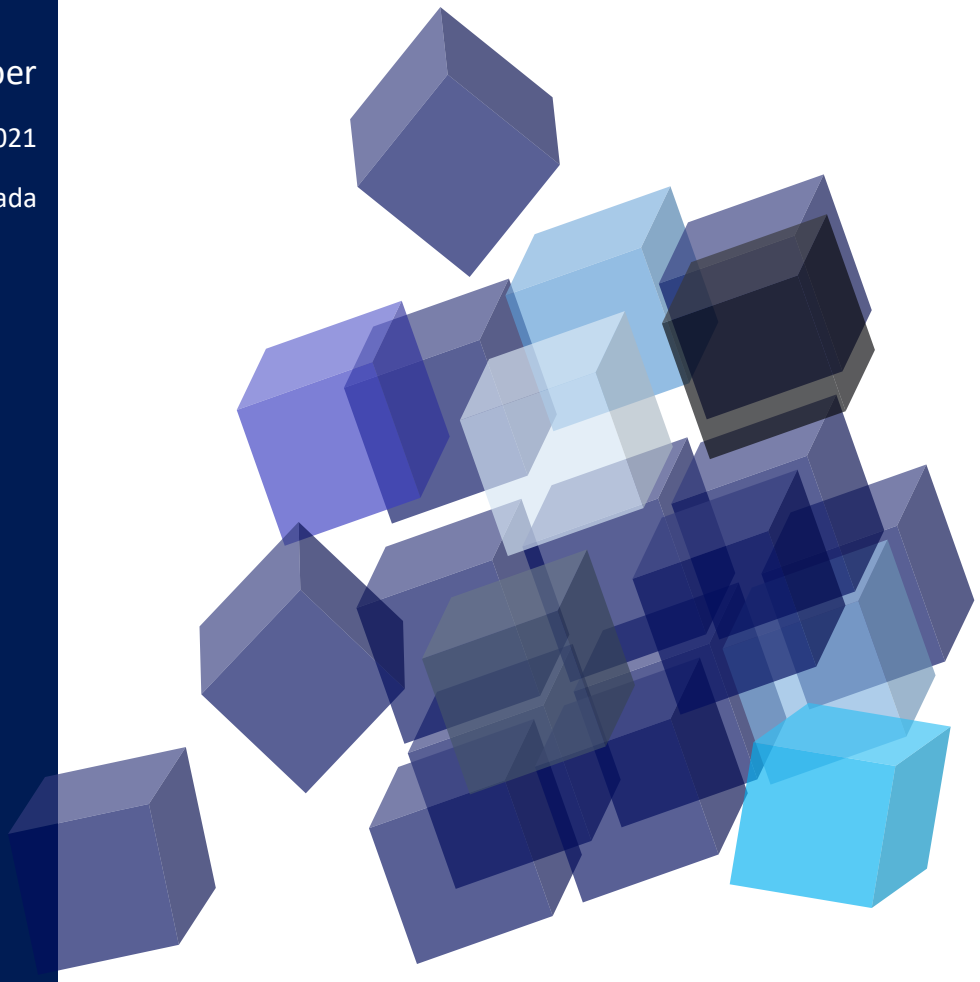

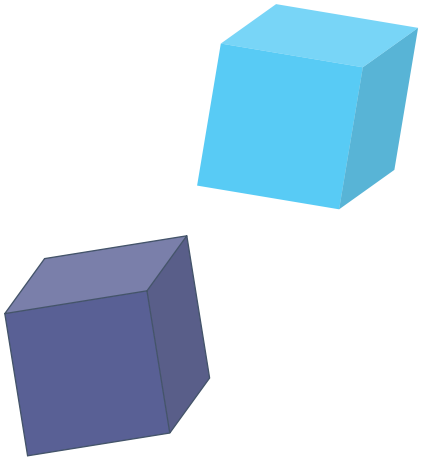

This whitepaper is part of a broader series that will tackle all the key aspects of building a resilient and sustainable digital economy. To name a few: benchmark of best practices for digital policy practices, how to achieve a e-Government and smart public services, the role of the digital infrastructure, arising competition issues in the digital platforms markets and more to come.

The present whitepaper is addressed to policy makers but more broadly to any actor of the digital economy: businesses, civil society, trade unions, Internet technical community or digital services users.

Any comments or suggestions may be shared on DigiConomy.info.

Executive summary

In 2021, 'a year ago' seems to refer to another era. This is because the world is undergoing big and rapid shifts. In one hand, measures such as social distancing, lockdowns and travel restrictions, have increased societies' dependencies on digital technologies with teleworking, e-commerce, or even distance learning. In another hand, the emergence and evolution of new technologies and their application into digital services are rapidly transforming entire sectors, business models and jobs. During such unprecedented times, governments have had, and still have, to make difficult choices: finding the right balance between protecting lives and salvaging the economic activity to prevent a social and economic crisis in addition to the continuing sanitary crisis. Consequently, while they are still heavily mobilized to combat the pandemic, governments shall prepare long-term plans to exit the crisis management, transit towards the recovery mode and build a sustainable and resilient economy.

> *"Based on the experience of past epidemics, investment is likely to remain weak for several years following the COVID-19 pandemic, but it is possible that renewed investment in digital technologies will spur productivity gains in some sectors.*
> *A supportive policy environment will be key to laying the groundwork for an investment rebound in emerging markets and developing economies.[1]"*
> *Global Economic Prospects, January 2021, WBG*

In this context, policy makers face a pressing need to design a holistic, integrated and tailor-made **National Digital Transformation Strategy ("NDTS")** that shapes the way digital technologies and applications will transform their economy, their nation and their country's stance in the global digital marketplaces to ultimately build a sustainable and resilient digital economy.

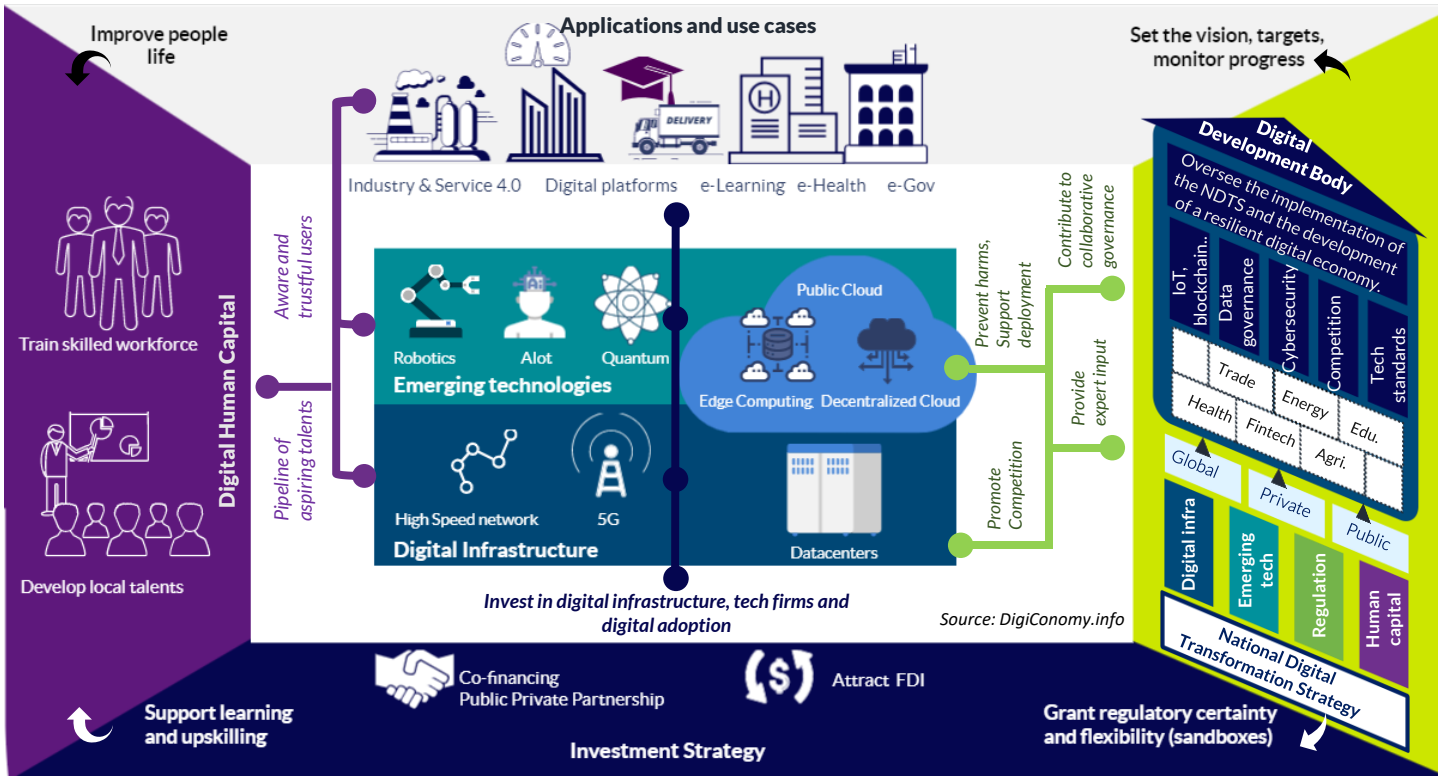

Figure 1: Digital economy and society: the role of the NDTS and a digital development body

Because of the interrelations (see simplified representation in Figure 1) between the stakeholders driving the digitalization of the economy and the society, the preparation, the implementation and the maintenance of the NDTS require a novel governance model based on a cross sectoral and public-private collaboration. The OECD acknowledges that the engagement with stakeholders, including officials from different levels of the government and also non-government stakeholders, at an early stage of the strategy development is a key element to good policy making[2]. In 2019, 24 out of 33 surveyed OECD countries had multiple public and private stakeholders contributing to their national digital strategy governance[3].

Determining the role of the public and private sectors, assessing the country's stance in the global digital trade and identifying the enablers to build a sustainable and resilient digital economy, are essential to the preparation of the NDTS. Although governments may choose to address specific issues by developing distinct strategies focused on AI, Blockchain or Cybersecurity for example, the versatile and overarching nature of the digital ecosystem calls for a holistic and integrated overall policy that shall contemplate the big picture before being disaggregated into more focused subsequent policies and initiatives.

In addition, careful considerations shall be given to the investment strategy, by evaluating potential opportunities for FDI or public-private co-financing through vehicles like PPP. As such, the NDTS should also tackle the investment in digital infrastructure, in digital firms and in digital adoption by firms across all industries.

Consequently, NDTS shall essentially address the following questions:

To which extent the government shall intervene in the digitalization of the economy and society?

Is the private sector already sufficiently leading the digitalization of the industry? shall the NDTS be more focused on public services?

How shall the government drive the transformation of public services with initiatives such as smart cities, e-Health and e-Education?

Shall the NDTS provide support to accelerate the transformation of SMEs? How? What are the sectors to prioritize?

Do large companies need support and incentives to play their part in the country's digital journey?

What is the country's desired stance in the international digital marketplaces? What is the country's mix of importing, exporting or/and transiting digital resources (technologies, workforce, equipment) and digitally enabled outputs?

What are the main enablers to achieve the objectives? Which measures shall be put in place to strengthen such enablers?

Is the digital infrastructure ready in terms of availability, affordability, robustness and scalability?

How to promote and support the development, innovation and adoption of emerging technologies?

How the regulatory framework and governance shall be updated to adapt to the pervasively and cross sectoral application of digital technologies and services? How to migrate towards a collaborative and data driven regulatory model

[2] Going Digital: Shaping Policies, Improving Lives, 209, Box 9.1 The multi-stakeholder model: a key to good policy making in the digital age, OECD.

[3] Digital Economy Outlook, 2020 edition, Table 2.2. National digital strategy governance, OECD

and efficiently use approaches such as regulatory sandboxes, self-regulation, or co-regulation to encourage innovation, support the deployment of new and emerging technologies and incentivize investment?

How to develop local talents and create a pipeline skilled workforce that will thrive in the digital labour market? How to close the usage gap and empower everyone with the appropriate mix of skills?

The preparation, the implementation and the monitoring of the NDTS require a novel tailor-made governance model based on cross sectoral and public-private collaboration involving a wide range of stakeholder groups, such as businesses (major and small players), civil society, the Internet technical community and trade unions. The same applies to the digital regulatory framework. Can policy makers hit two birds with one stone?

International ICT institutions[4] are unanimous: the next generation of ICT regulation, ie. the fifth generation regulation ("G5") will make sector specific regulators work together. This is because silo-style (ie. sector specific) regulation does not apply to the digital world. Rather than leaving the question of how to achieve the collaborative regulation for later, governments may set its foundation while preparing the NDTS, with the Build, Entrust and Empower ("BEE") approach (see Figure 2).

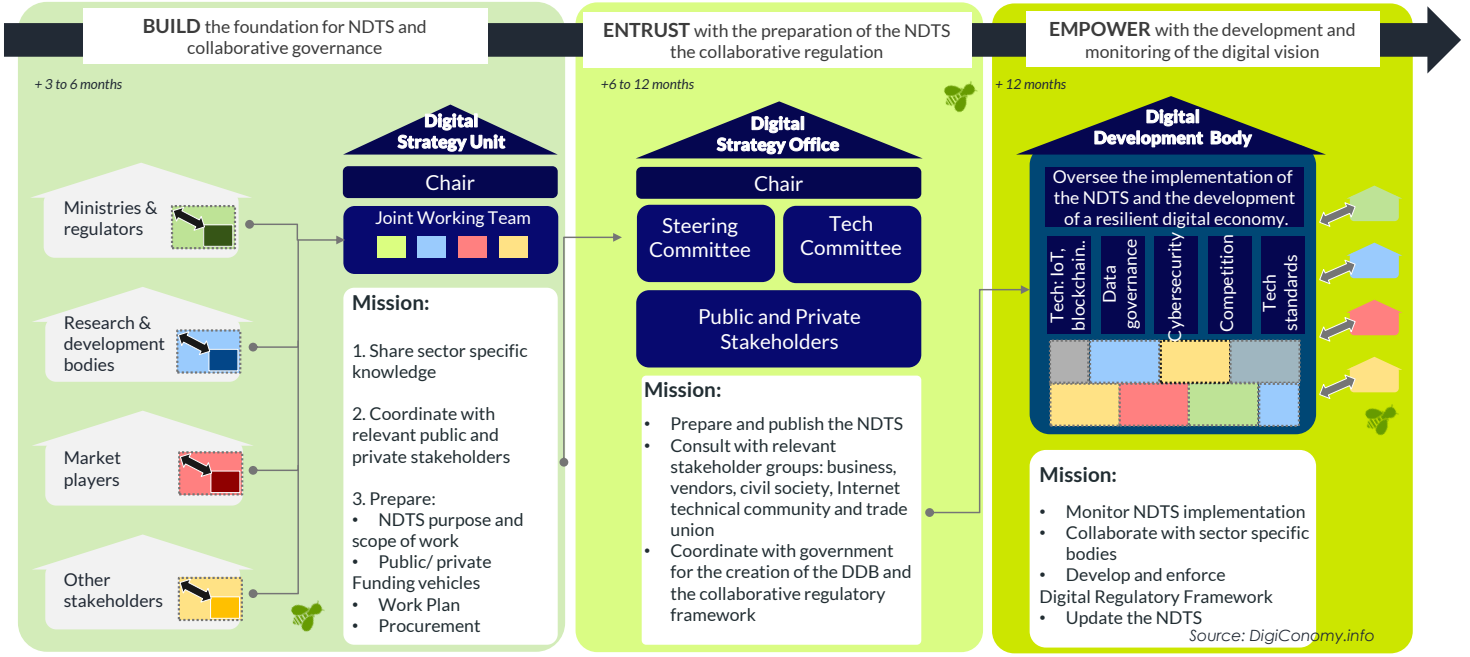

Figure 2: A Build, Entrust and Empower approach to design the NDTS and achieve the long-term digital economy's objectives

[1] Global Economic Prospects, January 2021, Box 3.2 Impact of COVID-19 on investment: Deep, persistent, and broad based, World Bank Group

[4] Global ICT Regulatory Outlook 2020 edition, Chapter 1: The need for collaboration and metrics – and a new benchmark, ITU

Digital Regulatory Handbook, 2020 edition, Chapter 1. Regulatory governance and independence, ITU and the World Bank co publication

Digital Transformation: Powering the Great Reset, July 2020, World Economic Forum

Digital Economy Outlook, 2020 edition, Chapter 1. Going digital: An integrated approach to policy making in the digital age, OECD

BUILD the foundation for NDTS and collaborative governance

The first step of the BEE consists of gathering representatives from relevant government bodies (e.g. ministries, sector regulatory bodies, economic and investment boards) to form a Digital Strategy Unit ("DSU") chaired by the highest levels of the government (ie. head of government or a lead minister[5]). The DSU members will not only work together, but also ensure the knowledge sharing and the capacity building within their original organization.

The mission of the DSU is to lay the foundation to prepare the NDTS and the migration towards a collaborative governance. In addition to prepare the scope of work and start the engagement with private stakeholders, the DSU shall assess the costs and evaluate the co-financing options. In the EU for instance, 48% of the national initiatives reported in the 2018 EU Digital Transformation Scoreboard[6] were co-financed with both public and private funding in equal amount (and the industry exceeded the public funds in 16% for these initiatives).

ENTRUST with the preparation of the NDTS and the collaborative regulatory governance model

After few months of operation, the DSU shall ultimately be extended to a more organized structure, the Digital Strategy Office ("DSO"), which is entrusted with the preparation of the NDTS and the plan to achieve a collaborative regulation across different sectors. The idea is to leverage all the knowledge sharing and consultation with the stakeholders to not only set the country's digital vision but also to shape the G5 regulatory framework.

EMPOWER with the implementation and development of the NDTS and the collaborative regulation

Finally, after the NDTS is issued, governments shall empower a digital body, in the Figure 2 referred to as the Digital Development Body ("DDB"), which shall be responsible for:

- the monitoring of the implementation of the NDTS Action Plan and subsequent initiatives. The DDB would not be responsible for implementing all the diverse initiatives set in the NDTS and subsequent policies, but would rather coordinate closely with the responsible entities to monitor the progress, to provide all the required support and to set fit for purpose reporting mechanisms and feedback loops;
- the implementation, monitoring and update of the regulation to ensure that regulated entities are complying with the rules and that the rules themselves are achieving their intended purpose.

Ideally, the DDB shall oversee, in cooperation with other regulators, competition matters, data privacy and protection, cybersecurity, AI ethics and provide an appropriate regulatory response to emerging technologies such as IoT, Blockchain. Its purpose is to promote greater innovation and incentivize investment.

In order to facilitate the bridge with other government bodies, the resources (staff and intelligence) that were built and developed within the relevant bodies during the BUILD step, shall ultimately be shared and/or transferred to the DDB.

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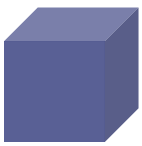

[5] Digital Economy Outlook, 2020 edition, Box 1.8. Five steps to develop a digital transformation strategy, OECD

[6] Digital Transformation Scoreboard 2018 edition, Source of funding, European Commission

Introduction:

In 2021, 'a year ago' seems to refer to another era. In a couple of weeks, societies have had to face unprecedented changes affecting every aspect of people lives: such changes would normally occur in a progressive manner and over multiple years of transition.

The role of the State has been essential. Governments have had, and still have, to make difficult choices: finding the right balance between protecting lives and salvaging the economy to prevent a social and economic crisis adding to the continuing sanitary crisis.

While many questions are still unsolved, there is one element of answer that has become clearer at every stage of this unexpected crisis: the determining role that the Information Communications Technologies ("ICT") plays in societies. Although societies were already more and more dependent on digital applications, this dependence has been amplified during the pandemic. Social distancing and limited physical interactions have accelerated and increased the need for digital services.

If the vaccines have brought some hope of progressively building a new normal, more responses and actions are expected from governments. The disruption of businesses and education will affect the economy for years, even after the end of the pandemic. Policy makers must face a new challenge: how to reclaim the economy in a disrupted world?

A pressing need for a holistic, tailor-made and integrated NDTS

Building a sustainable digital economy is at the center of governments' agenda, and this is not new. The global digital journey has started with the expansion and development of telecom services. Through the liberalization of the telecom market few decades ago, policy makers have realized the social and economic potential of the Internet and its implication for societies. National visions and policies were issued, and regulators have constantly adjusted their framework to achieve a fair, ubiquitous and affordable access to telecom services, for both general public and businesses. Telecom services have been evolving at a pace that allowed regulators to solve issues as they appear in order to promote competition, and achieve the policies objectives.

As telecom services have evolved, ICTs have developed too and resulted in new digital services reaching many sectors: social media, carrier and delivery service, retail and commerce and the list keeps growing. Major digital platforms and tech companies are leading the 'digital revolution'. Because of their diversity and fast evolution, digital services are affecting all industries and services, therefore contributing to digitalize the economy overall.

From the beginning of the pandemic, governments have had to handle an unprecedented disruption of the normal functioning of the society. While most countries are still struggling to contain the spread of covid-19, the sudden interruption and slowdown in economic activity by many consumers and producers, constitute an unprecedented combination of adverse shocks that is causing deep recessions in many advanced economies and emerging market and developing economies. The recessions resulting from the pandemic are expected to leave long lasting scars, and erode productivity and potential output for extended periods[7].

In such context, governments, which immediate priorities are still to address the health crisis and moderate the short-term economic losses, must also undertake comprehensive development

[7] Global Economic Prospects, June 2020, Chapter 3 Lasting Scars of the Covid-19 Pandemic, World Bank

programmes to improve the fundamental drivers of economic growth and to prevent their national economy to sink .

Countries have taken extraordinary measures to support individuals and businesses[8]. While such measures have prevented dire societal consequences, they are temporary and not sustainable. Therefore, governments shall develop of a long-term approach to exit the crisis management and transit towards the recovery mode before aspiring to reach the sustainable growth mode. While managing the crisis, countries have increased their dependencies on digital technologies with teleworking, e-commerce, cross border research or even distance learning.

In such context, the need for a National Digital Transformation Strategy ("NDTS" has become more pressing.

transform the society, the industry and service, and the country's stance in digital marketplaces. The purpose of a NDTS is not to predict the future but to set a clear roadmap to achieve the desired objectives while building on the existing resources and emerging opportunities.

A quick look at the dynamics that drive the digitalization of the economy (refer to Figure 1) makes it relatively clear that drawing a national digital vision requires coordination and collaboration between multiple public and private stakeholders.

Although governments may choose to issue distinct policies to address specific issues, such as an AI strategy or a Cybersecurity strategy, the versatile and overarching nature of the digital ecosystem calls for a holistic and integrated overall policy that shall contemplate the big picture before being disaggregated into more focused subsequent policies and initiatives.

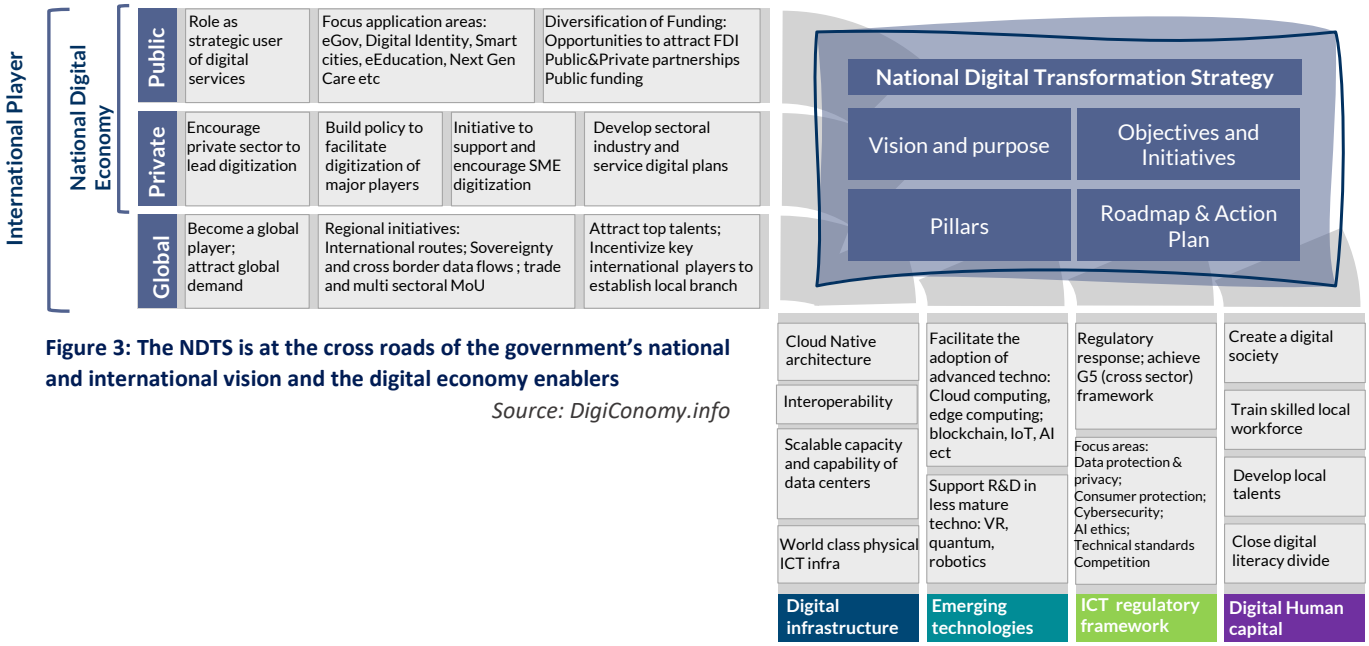

Figure 3: The NDTS is at the cross roads of the government's national and international vision and the digital economy enablers

Source: DigiConomy.info

A NDTS is a key step for policy makers to shape the way digital technologies and applications will

[8] Government support and the COVID-19 pandemic, version 14 April 2020, OECD

A NDTS shape the way digital technologies and applications will transform the society, the industry and service, and the country's position in the global digital marketplaces

There is no fit-for-all approaches to prepare a NDTS. On the contrary, the setting of the objectives and goals relates to dimensions that are intertwined, as shown in the Figure 3:

When preparing the NDTS, policy makers shall consider the following questions (see Figure3):

- Is the private sector already leading the country's industry and service digital transformation? shall the NDTS be more focused on creating a smart e-Government and societal initiatives?
- How shall the government drive the transformation of public services with initiatives such as smart cities, e-Health and e-Education?
- Shall the NDTS provide support to accelerate the transformation of SME? How?
- Do big companies need support and incentives?
- What is the desired stance in the international digital marketplaces? What is the country mix of importing, exporting or/and transiting digital resources (technologies, workforce, equipment) and outputs?

Policy makers shall also assess the readiness of the key enablers to digital transformation, the digital infrastructure, the emerging technologies, the ICT regulatory framework and the digital human capital, and elaborate appropriate measures to solve any bottleneck and achieve the desired objectives.

These questions will all require careful considerations on the investment strategy, by evaluating potential opportunities for FDI or public-private co-financing through vehicles like PPP. As such, the NDTS should cover the investment strategy in digital infrastructure, in digital firms and in digital adoption by firms across all industries. The investment dimension of the

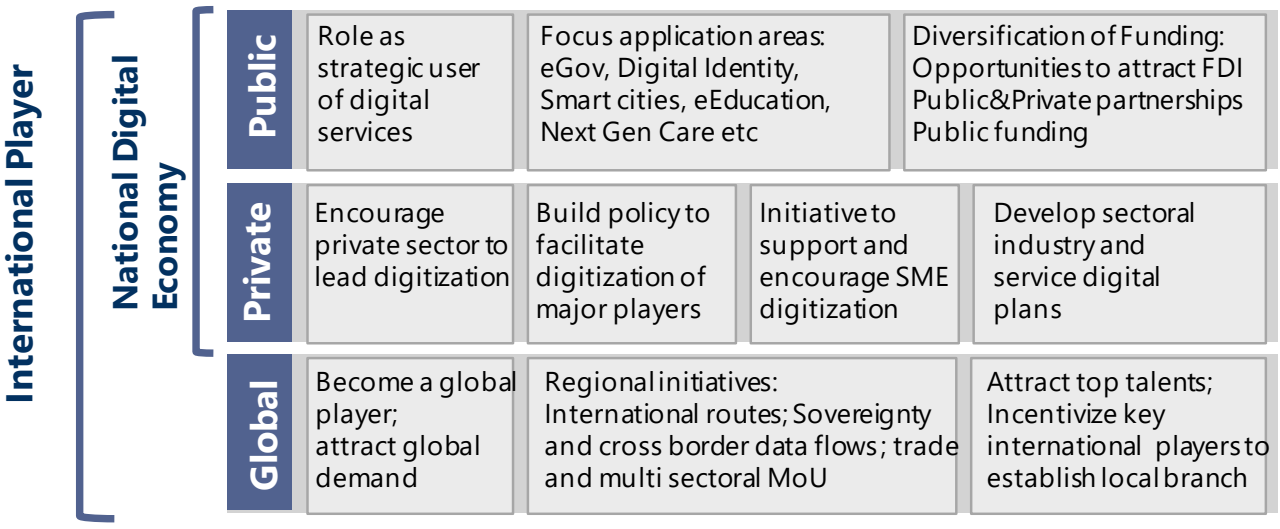

Figure 4: The NDTS shall look at the role of the public, private sector and also consider the country's stance in the global digital marketplace *Source: DigiConomy.info*

NDTS is of great importance, and the participation of private stakeholders may take multiple forms. In Asia for example, addition to FDI, many foreign Multi National Enterprises ("MNE") have participated in the country's infrastructure and development of special economic zones ("SEZs") through non-equity means, including as engineering, procurement and construction contractors.[9]

The scope of the NDTS

What is the role of the government?

The government is a key user of digital services and applications (see Figure 4).

For example, creating a smart government is an important step to achieve a smart society. In general, the public sector is slower than the private sector in term of digitalization, that is why some countries have first focused their NDTS into creating an e-Government and into undertaking social initiatives such as providing digital public services and supporting the development of digital skills.

But e-Government is not the only application of the digital transformation to the public sector. Smart cities, E-Education, next generation care and mobility are other sectoral applications and use cases that are driven by the public sector. Instead of being fully financed by public funding, they can materialize through innovative vehicles such as PPP.

What is the role of the private sector?

The private sector, in particular big and international corporations such as MNE, are leading the digital transformation. This is because digital services and applications not only transform businesses models but also contribute to massively increase productivity and as Paul Krugman once said "*Productivity isn't everything, but in the long run is almost everything*". One could therefore think that the private sector does not really need to be covered in a NDTS since it already has diverse and very important incentives to carry out its digital journey.

Yet policy makers shall carefully consider the following points:

i. Check whether the large corporations, especially those in position of dominance, are effectively contributing to the digitalization of the country. Indeed, a dominant player, in any market, has less incentive to innovate than its competitors. Therefore policy makers should , in one hand put mechanisms in place to monitor that big companies are playing their part in the national digital journey, in another hand ensure that the four enablers in particular are robust enough to allow such corporation to play their part. In 2020, skills gaps in the labour market was the first perceived barrier to the adoption of new technologies for 55.4% of the companies surveyed by the World Economic Forum[10]. The other main barriers were the inability to attract specialized talents (46.7%), the skills gaps among the organization's leadership (41.%) and the lack of flexibility of the regulatory framework (33%).

ii. Support the small and medium/one person enterprises ("SM/OPE") as they face more barriers than large enterprises to go digital. SM/OPE do not necessarily have the resources to start their transformation. The Singapore Digital

[9] World Investment Report, 2020 edition, Chapter II Regional Trends, Par. A.2 Developing Asia, UNCTAD

[10] Future of Jobs Survey, 2020 edition, Chapter 2 Forecasts for Labour Market Evolution in 2020-2025, Figure 26, World Economic Forum

Office[11] is a great example on how governments can accompany the SM/OPE in their digital journey.

What is the country's stance in the global digital marketplaces?

One of the main characteristics of the digital world is to be borderless. Consequently, policy makers shall also draw a clear picture of the country's expected position in the digital trade, as a digital resources user and producer, at regional and international level. In other words, this means that governments shall define the desired mix between being an importer, an exporter, or a transit agent of digital resources and digitally enabled outputs.

For example, countries with high demand for digital services are being wooed by major players such as cloud providers to establish their datacenters and points of presence there. On the contrary, countries which are digitally developed, but which demand size is more limited, need to consider other ways to attract such players, by for instance:

i. Providing skilled and competitive workforce.
ii. Ensuring the diversity and affordability of the international routes.
iii. Positioning the country as a gate to access bigger demand by solving issues related to data sovereignty and cross border data[12].

Defining the international dimension of a country's digital transformation requires to identify the relevant channels to achieve regional and international collaboration. Such collaboration may materialize through sectoral MoU and trade agreements, common initiatives to increase security of the cyber domain, new and more diverse submarine cables, regional regulatory initiatives to govern the storage, transfer and use of data or the regulation of digital platforms for instance.

The enablers:

A country's digital transformation is not only driven by the dimensions discussed above but enabled by four pillars (see Figure 5).

The digital infrastructure.

The digital infrastructure refers to the physical and IT layers as inputs for all digital services. Examples of the main points to consider as part of the NDTS are:

i. The availability, affordability and overall readiness of the telecom services (5G, broadband, domestic/ international leased lines, IP transit etc.). Despite years of regulation of the telecom sector, some jurisdictions are still dragging domestic and international connectivity bottlenecks that slow down the digital transformation;
ii. The availability and scalability of datacenters and cloud computing services;
iii. The interoperability of platforms, which is metaphorically the 'telecom interconnection' applied to the IT layer[13];

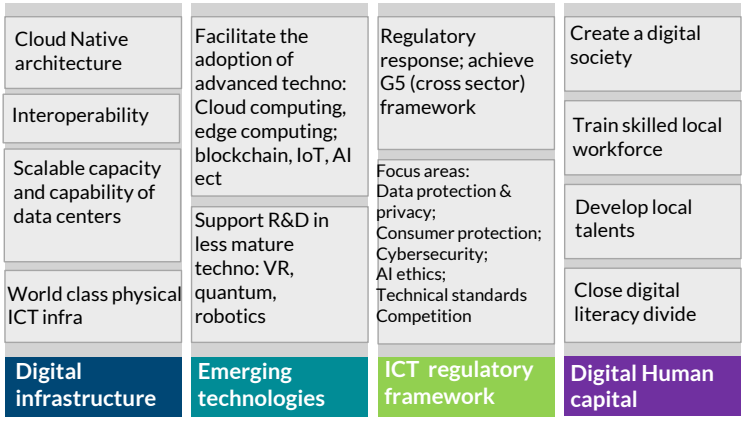

Figure 5: The enablers of the NDTS *Source: DigiConomy.info*

[11] https://www.imda.gov.sg/infocomm-media-landscape/SG-Digital-Office

[12] Trade in the Digital Era, March 2019, OECD

[13] Framing policies for the digital economy, 2018, Chapter 2: Regulatory and Policy Challenges, Singapore e-Government Leadership Centre, Global Centre for Public Service Excellence

iv. The development of a cloud-native architecture[14] that businesses can rely on to easily and seamlessly scale up or down their IT capabilities in accordance with their needs without having to incur fixed costs such as purchasing underutilized hardware.

The emerging technologies

Blockchain, AI, big data, and the IoT are the enabling technologies, which when applied to the traditional sectors such as finance or agriculture, create new business models that may shift the creation of value within and between segments of the value chain. It is important to understand how these technologies affect the policy areas and to design appropriate measures to facilitate their adoption and support their development.

The ICT regulatory framework

The digital economy gives to policy makers an opportunity to update and streamline outdated laws and regulations and adopt data driven measures such regulatory sandboxes, self-regulation, or a co-regulatory approach. A flexible and collaborative regulatory framework will lead to support innovation, encourage the deployment of new and emerging technologies and incentivize investment. Key areas shall be tackled such as data privacy and protection, cybersecurity, AI ethics, technical standards and competition in the digital markets[15]. In addition, the regulatory governance model needs more collaboration at two levels:

First, the pervasive and ubiquitous aspects of digital services call for a collaborative regulatory framework[16] that would be enforced by one digital body in collaboration with other sectoral regulatory authorities.

Second the borderless aspect of digital services calls for greater regional and international collaboration in areas such as data sovereignty and cross border data. Regional collaboration is also preferable to avoid fragmented regulation to address the competition issues arising in the two-sided digital platform markets and “areas of businesses ” as it has been recently pointed out in the EU’s Proposal for a Digital Market Act[17].

The digital human capital

Almost half the world population was not using the Internet in 2019[18] hence closing the digital usage divide still remains a number one priority for policy makers.

Policy maker shall also take appropriate measures to close the gap between people with high versus low education levels and empower everyone with the appropriate mix of skills to fill the skills shortage in the labour markets. This could be achieved by reviewing the education curriculum and developing training systems to better exploit the possibilities of digital learning.

Finally, as people are the ultimate users of all the services created through the digitalization, policy makers shall ensure that their privacy and rights are protected at all times and all layers of the digital value chain.

[14] The Future of Services, 22 Nov 2018, Singapore Services And Digital Economy Technology Roadmap

[15] Digital Regulation Handbook, edition 2020, Chapter 7. Regulatory responses to evolving technologies, ITU

[16] Ibid.

[17] Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), 15 December 2020, European Commission

[18] Measuring digital development Facts and figures 2020, ITU

The preparation, implementation and maintenance of the NDTS require a novel governance model based on cross sectoral and public-private collaboration. And the same applies for the ICT regulatory framework. Can policy makers hit two birds with one stone?

Collaboration between government stakeholders is a concept that seems disconnected from the reality for any public servant who has experienced the insurmountable barriers between government agencies. Yet, international ICT institutions[19] are unanimous: the next generation of ICT regulation, ie the fifth generation ("G5") will make sectoral regulators work together. This is because silo-style (ie sector specific) ICT sector regulation does not apply to digital ecosystems. Collaborative regulation is needed to reflect and take into account the interrelations between the digital infrastructure, services and content across industries and national borders. It is also an effective way to develop comprehensive and consistent rules that will be applied to all sectors in which regulatory frameworks were previously independently developed over the years.

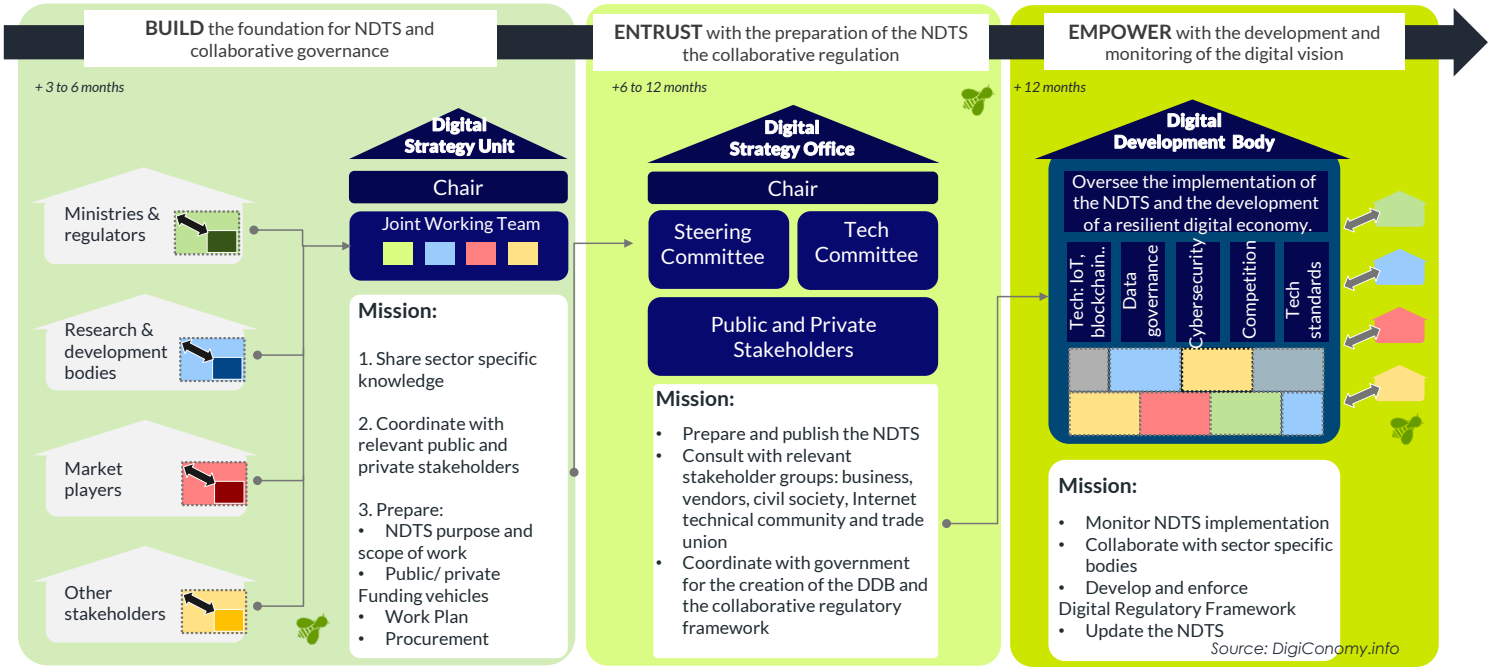

Figure 6: A Build, Entrust and Empower approach to design the NDTS and to achieve the long term objectives

[19] Global ICT Regulatory Outlook 2020 edition, Chapter 1: The need for collaboration and metrics – and a new benchmark, ITU
Digital Regulatory Handbook, 2020 edition, Chapter 1. Regulatory governance and independence. ITU and the World Bank co publication
Digital Transformation: Powering the Great Reset, July 2020, World Economic Forum,
Digital Economy Outlook, 2020 edition, Chapter 1. Going digital: An integrated approach to policy making in the digital age, OECD,

And the NDTS plays a role in this too.

This is because the very preparation of the NDTS requires collaboration between policy makers, single-sector and cross-sector regulators but also market players of any size, that will work together through a collaborative governance model and organic consultation. Most of the OECD countries for example, have developed their NDTS by involving representatives from a wide range of stakeholder groups, that includes businesses, civil society, the Internet technical community and trade unions, among others, and different parts of the government, including at the subnational level[20].

In one hand, cross governmental/private stakeholders coordination is a must to prepare the NDTS and in another hand tomorrow's digital regulatory framework will require cross sectoral design and enforcement. Rather than leaving the question of how to achieve collaborative regulation for later, governments may set its foundation while preparing the NDTS, with the Build, Entrust and Empower ("BEE") approach.

BUILD the foundation for NDTS and collaborative governance

The first step of the BEE consists of gathering representatives from relevant government bodies (ministries, regulatory bodies etc) to form a Joint Working Team ("JWT") led by a Chairing Committee of the highest levels of government. The JWT members will not only work together as part of the Digital Strategy Unit ("DSU"), but also ensure the capacity building and knowledge sharing within their original organization. The mission of the DSU is to:

a. Share sector specific knowledge regarding existing initiatives such as open data, silo regulatory sandboxes for emerging technologies and services, data governance and cybersecurity.
b. Coordinate with relevant public and private actors. Not all government agencies need to be a member of the JWT, but some shall be informed and consulted upon. The JWT shall also start the engagement with private stakeholders and identify which stakeholders shall be part of the technical committee during the preparation of the NDTS.
c. Prepare all the preliminary work :
    i. Draft the NDTS scope of work and overall purpose,
    ii. Define the governance model and processes. This is to appoint the members of the steering and tech committee and also the stakeholders, both public and private, which shall be part of the consultation process.

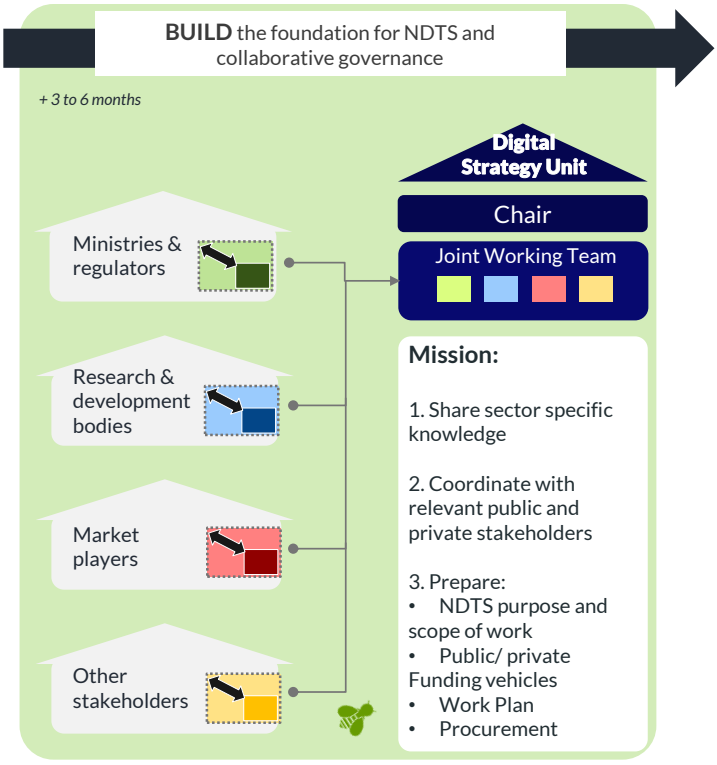

Figure 7 Build the BEE

[20] Digital Economy Outlook, 2020 edition, Chapter 2: Policy trends, OECD

iii. Assess the cost and evaluate the funding options. In the EU for instance, 48% of the national initiatives reported in the DS18 are co-financed by both public and private funding in equal amounts (and private funds exceed public funds in 16% of the initiatives)[21].
iv. Design the Work Plan which describes the activities and milestone.
v. Procurement of the work that needs consultancy services and expertise.

The Build step is essential to bring the different stakeholders together, share knowledge, build capacity within the government bodies and prepare the framework to deliver the NDTS and migrate towards a G5 regulation. Depending on the jurisdictions, it shall take between 3 to 6 months to form the Digital Strategy Office ("DSO") and start the preparation of the NDTS.

ENTRUST with the preparation of the NDTS and the collaborative regulatory governance model

The DSO is entrusted with the preparation of the NDTS and the plan to achieve a collaborative regulation across different sectors. The idea is to leverage all the knowledge sharing and consultation to not only set the country's digital vision but also to shape the G5 regulatory framework.

Different structures are possible for the DSO, but at the high level, the functions can be divided into four groups:

1. The Chair/Co-Chair
2. The Steering Committee composed of government representative from ministers (finance, economy, ICT, education, health, energy etc), regulators and economic boards;
3. The Tech Committee composed of both government, academics and private stakeholders such equipment vendors, cloud computing providers, etc
4. The Public and Private Stakeholders which shall be part of the consulted parties

The mission of the DSO is to prepare the NDTS but also to coordinate with the government on defining the matrix of responsibilities for each initiative set is NDTS action plan and monitor the

Figure 8 Entrust the BEE

progress. This can be done by creating a Digital Development Body ("DDB") which will be responsible for coordinating and monitoring the

[21] Digital Transformation Scoreboard 2018 edition, Source of funding, European Commission

implementation of the NDTS action plan and the subsequent policies and framework. At the same time, the DDB will be ideally positioned to become the digital regulator at the center of the G5 regulatory model.

EMPOWER with the implementation and development of the NDTS and the collaborative regulation

Finally, governments shall empower a digital body, in the Figure 9 referred to as the DDB, to be responsible for:

- the monitoring of the implementation of the NDTS Action Plan and subsequent initiatives. The DDB would not be responsible for implementing all the diverse initiatives set in the NDTS and subsequent policies, but would rather coordinate closely with the responsible entities to monitor the progress, to provide all the required support and to set fit for purpose reporting mechanisms and feedback loops;
- the implementation and monitoring of the regulation to ensure that regulated entities are complying with the rules and that the rules themselves are achieving their intended purpose.

Ideally, the DDB shall oversee, in cooperation with other regulators, competition matters, data privacy and protection, cybersecurity, AI ethics and provide an appropriate regulatory response to emerging technologies such as IoT, Blockchain to enable greater innovation and incentivize investment.

In order to facilitate the bridge with other government bodies, the resources (staff and intelligence) that were built and developed within

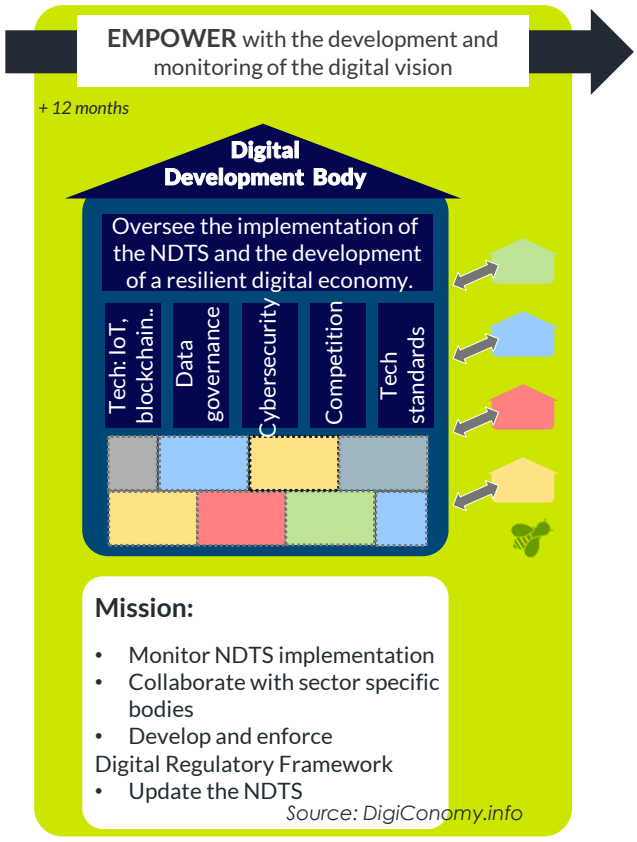

Figure 9 Empower the BEE

the relevant bodies during the BUILD step, shall ultimately be shared and/or transferred to the DDB.

In conclusion

The covid-19 pandemic is likely to leave scars in the global economy for the next coming years. As investments are globally decreasing, policy makers shall now set the groundwork to strengthen the economic drivers of growth. A comprehensive and integrated National Digital Transformation Strategy prepared and put in motion by highest level of the government, in cooperation with public and private stakeholders is a key milestone to shape the way digital technologies and service will transform the economy, the society and country's stance in the global digital marketplaces.