stratbase
ADR PUBLICATIONS

OCCASIONAL PAPER

SEPTEMBER 2019
ISSUE 12.9

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CHALLENGES AND OPPORTUNITIES IN THE PHILIPPINES

OCCASIONAL PAPER SEPTEMBER 2019
02

A POLICY AGENDA FOR CREATING A NATIONAL DIGITAL TRANSFORMATION STRATEGY: CHALLENGES AND OPPORTUNITIES IN THE PHILIPPINES

DIGITAL TRANSFORMATION

is a much-recognized buzzword describing on the exponential growth of new and enabling technologies such as the cloud, the Internet of Things, and big data among others. The World Economic Forum projects that DT-related initiatives will cost around US$350 billion from 2006 to 2025. The World Bank also echoes this optimism, stating that DT initiatives are expected to contribute to a 25 percent increase in global GDP by 2025.

Digital transformation (DT) is now an emerging factor in the evolution of industries and public services. Primarily due to the exponential development of new technologies and its ubiquity, this trend is characterized by the movement from organization-based IT systems to multiple cloud environments resulting in increased efficiency through user-centric business systems. It has also created new forms of engagement aimed at creating value for the customers. Moreover, this concept highlights the use of new information and communications technologies (ICTs) to enable major changes in organizations through the following: a) creating new business models; b) streamlining of operations; c) improving access to products and services; and d) enhancing the customer experience. Nevertheless, DT is more than just the use of new ICTs. Prevailing literature and practices suggest the need to adopt a strategic mindset that sees ICTs beyond its traditional role of enabling functional automation and integration. DT requires a holistic-ecosystem view and comprehensive actions that will enable organizations to exploit opportunities and address threats. This new perspective also encourages organizations to view DT as a strategic competency thus the need to redefine their strategy, culture and capacities.

In early 2019, the Philippines, with its continuous economic growth over the past decade, recognized the potential of DT. Through the Philippine Digital Transformation Strategy (PDTS) 2022, it hopes to leverage the use of ICT by providing a conducing environment for both the public and private sectors. The PDTS 2022 also aims to harmonize the existing e-government initiatives to take advantage of the policy window create by the enactment of new laws. Furthermore, PDTS 2022 is the Philippine response to the ASEAN ICT Master Plan 2022 which calls for tighter integration of national economies. Envisioning the creation of a digitally-enabled economies, the plan also highlights the importance of DT in achieving inclusion and sustainability goals. Despite of this, government-led e-government initiatives continue to suffer from inadequate resources due changing political priorities and the need to further capacitate the bureaucracy.

This paper will examine the policy-related developments as well as the numerous ICT projects being pursued by the Department of Information and Communications Technology (DICT). In particular, the paper will discuss the salient points of these policies and identify challenges in its implementation. Lastly, the paper will put forward recommendations that aim to address the gaps that have been identified.

Image Credit: information-age.com/impact-internet-things-iot-123467

OVERVIEW OF PREVAILING LITERATURE

Today, digital transformation (DT or Dx) is a much-recognized buzzword describing on the exponential growth of new and enabling technologies such as the cloud, the Internet of Things (IoT), big data among others. The World Economic Forum projects that DT related initiatives will cost around US$350 billion from 2006 to 2025. The World Bank also echoes this optimism, stating that DT initiatives are expected to contribute to a 25% increase in global GDP by 2025 (WB, 2019).

In Asia, DT can be best seen in the online business to citizen (B2C) environment with China leading the charge garnering 25% of the global market. Despite this, Asian countries still face barriers due to the perceived complexity of DT. In addition, infrastructure gaps continue to hound several Asian countries, which denies them the benefit of fully participating in the digital economy. National DT initiatives require change from market policies down to the comprehensive re-engineering of structures and procedures (ADB, 2018).

At this point, one might ask the question, "what is digital transformation?" "How can such a new trend promise to generate significant benefits and opportunities for its users?" As for its definition, DT is seen as the "integration of digital technologies into all sectors of an organization, fundamentally altering performance and how it creates to its customers" (Gebayew et al, 2018). Mile and Bulanda (2019) further suggest that these enabling technologies will result in the following: connected workers, remote and autonomous operations, integrated platforms, advanced analytics and simulation among others. It is adopted by organizations to gain the digital edge, wherein there exists an integration of both digital and physical resources (Gobble, 2018). However, the more dominant view of DT is that of its promised outcomes enabled by new technologies. Focusing on its transformative effect across an organization, DT entails transforming your organization's strategic perspective, processes and culture, thus resulting to new business models and policies (Warner & Wagner, 2019). Gobble (2018) refers to a deeper practice, proposing that these changes focus on business processes, competencies, organizational structure and activities as well as business models.

For the public sector, the DT agenda must go beyond the e-government "business as usual" approach. This means that governments must re-examine their current services and practices by looking at the capabilities of new technologies and absorption capacity of its organization. Steps must be taken on how to fully leverage emerging technologies, define new service strategies and further empower public organizations and citizens (UN APCICT, 2019). Furthermore, DT initiatives in the public sector must look beyond the new public management concepts of efficiency and transparency to how these new technologies can be used to foster collaboration and innovation (Meijer and Bekker, 2015).

Regarding the factors on how DT can be successful, authors like Warner and Wagner (2019) suggest that strategic agility combined with an organization's ability to prototype innovative digital solutions are vital in ensuring the adoption of DT. They further claim that refusal of organizations to do experimentation and maintain legacy systems are pitfalls that will hinder DT. In addition, other authors cite the need to develop the relevant skills for DT, address the right problems, and provide a clear roadmap to integrate digital and physical resources (Mielli and Bulanda, 2019) (Gobble, 2018) (Fountain, 2018).

EXAMPLES OF NATIONAL INITIATIVES FOR DT: ESTONIA AND SINGAPORE

Estonia: Europe's true e-government

Since gaining its independence in 1991, the Republic of Estonia has transformed itself to be one of the leading digitally enabled societies in the world. According to government claims, 90% of public services are online, resulting in an estimated annual saving equivalent to 2% of its GDP and cuts more than 800 years of work time in both private and public sectors. Estonia also prides itself to be Europe's home for digital innovation by having a high proportion of tech unicorns in relation to its population and having the first ever digital nomad visa for international tech developers (Schulze, 2019). This feat was achieved through a conscious effort to build Estonia's critical ICT infrastructure. This was made evident through the x-road applications platform and the implementation of a national ID card.

The x-road is an open source data exchange layer that serves as an access point for Estonia's online government services using the national ID card. Estonia also pioneered internet-based voting using it for the first time in 2004. In the 2019 parliamentary elections, 43.8% of the votes were cast using this medium (Plantera, 2019).

Realizing the importance of embracing digital transformation, Kattel and Mergel (2018) claim that this feat was achieved with minimal institutionalization and formalization. Rather, DT is seen as a continuous engagement with government, the private sector and its citizens. Furthermore, DT and digital government advocates adopted open source solutions in developing their infrastructure and systems to deter large investments in commercial applications, thus avoiding legacy systems obsolescence and supplier capture (Ibid, p.7).

SINGAPORE AS A SMART NATION

Singapore's foray into digital transformation can be summed into being its goal to be a "Smart Nation." This concept envisions Singapore as a digitally-enabled nation that can increase its productivity and uncover new business opportunities. This vision also suggests the need to leverage emerging developments in

TABLE 1 . GENERAL CHARACTERISTICS OF THE ESTONIA AND SINGAPOREAN DT INITIATIVES

REPUBLIC OF ESTONIA	REPUBLIC OF SINGAPORE
• DT initiatives are less formalized with minimal institutionalization; • DT is characterized by a strong partnership with the private sector; • Pillars: National ID card and the X-Road initiative; • Encourage the use of open source model to minimize technology obsolescence and legacy systems trap	• DT is seen as a whole-of-government/ whole-of-society endeavor; • Mobilization of the nation's creative abilities through digital and innovation hubs; • Strong partnership with the private sector, the academe, and tech start-ups; • Envisions a leaner and stronger government

SOURCE: JICA (2008)

IoT, artificial intelligence, big data analytics and robotics (SNDGO, 2018). Furthermore, the government identified the following as the critical areas for its Smart Nation journey: education, finance, health, manufacturing, transportation, and urban solutions.

Another goal of this whole-of-nation effort is to further improve the delivery of public services. Through its Digital Government Blueprint 2023, Singapore envisions a vast improvement in its e-government service by promoting a leaner and stronger government through collaboration and innovation. The blueprint also identified quantitative goals for its e-government program to be achieved by 2023.

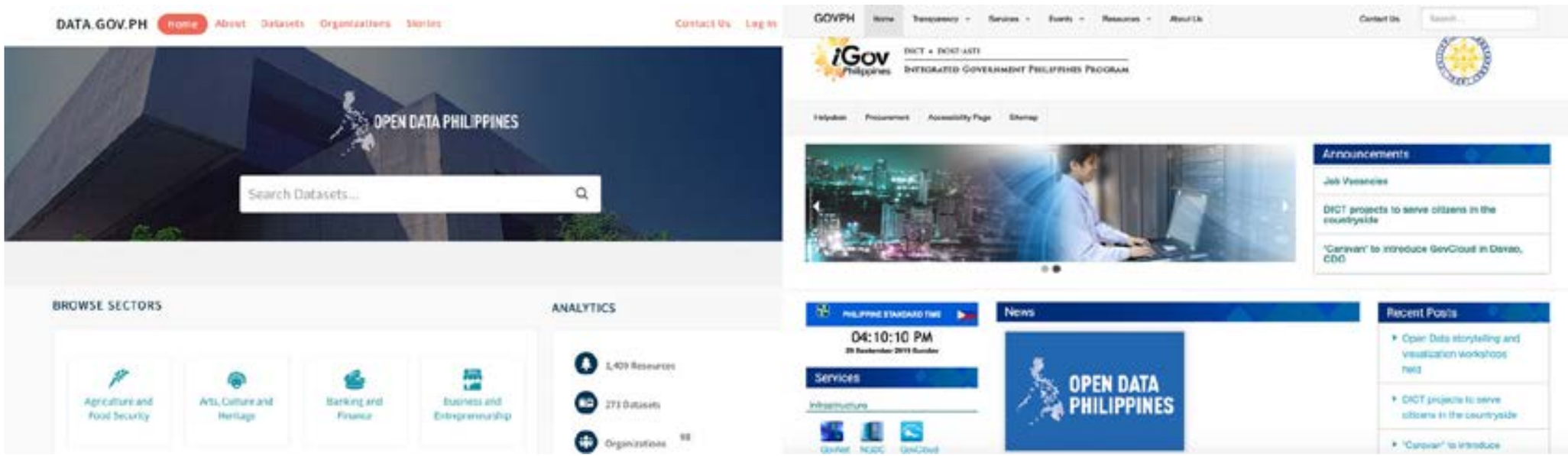
In addition, the government developed what they referred to as entrepreneurship hubs. These hubs are intended to provide venues for R&D and for the prototyping of applications related manufacturing. Some of the hubs (e.g. One North) are dedicated collaboration hubs where participants from the academe, government, start-up companies and research institutions can collaborate to develop innovative ICT solutions.

In both cases, DT initiatives started with its current e-government programs. However, DT as a concept, forced both countries to re-examine their current assumptions and projects, paving the way for new and innovative practices. Furthermore, literature also stressed the importance of developing a capable human resource base and the relevant telecommunications infrastructure that allows for high-bandwidth connectivity. Surprisingly, in the Estonian experience, Kattel and Mergel (2018) pointed out that the e-government and the current DT initiatives are not formalized nor institutionalized. This also means that generally, Estonia was not particular about adopting a national e-government or digital transformation strategy. Instead, most of the initiatives are decentralized (agency-specific) based on a general e-government architecture. Finally, the Estonian e-government and its DT practices relied heavily on open source standards and applications.

On the other hand, the experience of Singapore was more formal and institutionalized. The creation of the Smart Nation and Digital Government Group (SNDGG)—merging the SNGDO and the Government Technology Agency (GovTech)—intends to accelerate smart nation deployment and DT. Moreover, the Digital Government Blueprint 2023 contained specific targets for e-government related initiatives.

The experiences of Estonia and Singapore can provide valuable insights for the Philippines by emulating best practices and avoiding costly oversights. Policy makers can use these cases to develop informed policies and programs that are applicable to the needs of the Philippines.

FIGURE 1 . OPEN DATA PHILIPPINES AND IGOV SCREENSHOTS



SOURCE: WWW.DATA.GOV.PH AND WWW.I.GOV.PH

E-GOVERNMENT AND DT INITIATIVES IN THE PHILIPPINES

Pushing e-government in the Philippines (2011-2016)
In 2012, the Philippine government initiated several programs aimed at transforming systems and using public data. Most notable of these programs are the Medium-term Information Technology Harmonization Initiative (MITHI), the National Government Portal (NGP) and Open Government Data (OGD). For MITHI, this program envisioned the integration of key public services through the creation of common registries. Through the adoption of interoperability standards which allows for access to these registries, MITHI also featured the clustering of mission critical services. These services were in the following areas: a) Health; b) Education; c) Transportation, and d) Justice, Peace and Order (Magno, 2018).

Meanwhile, the National Government Portal (NGP) was developed to serve as an online gateway for all web-based government services. Launched on June 23, 2017, the NGP provided a unified, single access venue for government to citizen (G2C), Government to Business (G2B) and Government to Government (G2G) transactions. Parallel with the NGP is the iGovPhil program (i.gov.ph) which endeavored to build common information-transactional systems for government agencies. Launched in June 28, 2012, iGovPhil included the development of common interoperability standards to support MITHI. Known as the Philippine eGovernment Interoperability Framework (PeGIF), this framework provided the basic tenets to allow government information systems to be integrated through the technical, informational and organizational levels (ICTO, 2013)(Magno, 2018).

In addition, open government initiatives were pursued. The most significant of which is the creation of the open government data portal (www.data.gov.ph). The portal houses open formatted datasets from

selected government agencies. The purpose of releasing these datasets is to support the transparency initiatives of the government and encourage citizen participation. Figure 1 shows the opening page screenshots of the Open Government Data Philippines and the iGovPH websites.

Finally, laws were enacted to protect the country's information infrastructure and the personal data of its citizens. The Cybercrime Prevention Act (2012) further strengthens the government's ability to protect itself from cybercrimes and attacks through the creation of structures and procedures. Penalties were also prescribed to provide law enforcement agencies with statues to address these crimes. Also, the Data Privacy Act (2012) was also intended to protect the personal data of citizens from unlawful access and unwarranted use. The law encouraged organizations to be proactive in ensuring the safety of personal data while providing penalties for negligence and unlawful use.

MOVING TOWARDS DIGITAL TRANSFORMATION

The Philippine Digital Transformation Strategy (PDTS) 2022 encapsulates the overall plan of the Philippine government as it pursues its digital transformation goals. Created by the DICT, PDTS aims to provide the general philosophies and direction of DT for the Philippines. Furthermore, it builds on the previous and existing plans of the department. In particular, it recognizes the accomplishments of the current e-government programs and strives to consolidate the goals of the e-government master plan (EGMP) 2022 and the Philippine Digital Strategy. The plan also sees DT as an ingredient for achieving the country's development goals. The PDTS goals and targets are aligned with Philippine Development Plan (2017-2022) The PDTS 2022 is also the country's response to the ASEAN ICT Master Plan 2020, which provides for economic integration among member states using ICT. Box 1 provides an overview of the intentions of PDTS 2022.

Furthermore, PDTS 2022 calls for the continuation of e-government initiatives stated in the EGMP 2022. Specifically, programs intended to improve the delivery of public services and consolidate organizational functions through the integrated government-Philippines (iGovPH) program and the Philippine e-Government Interoperability Framework (PeGIF) shall be actively pursued. The iGovPH program contains open sourced applications (information systems) that can be shared with government agencies. While the PeGIF provides a standard for achieving interoperability of systems and procedures. Moreover, the PDTS 2022 underscores the importance of the NGP as the primary online gateway to access public services. This thrust is also consistent with the intent of the enacted laws on ease of doing business (RA 11032) and the national ID law (RA 11055). These laws provide the mandate for seamless integration of government information systems and the creation of registries to facilitate transactions.

Lastly, the PDTS 2022 aims to promote participation through social media platforms such as Facebook, Twitter, Instagram, etc. These initiatives support the government's plan to improve transparency and encourage collaboration among citizens.

E-GOVERNMENT MASTER PLAN 2022

Summarized in the vision of achieving a "One Digitized Government for the Philippines," EGMP 2022 is the blueprint of the government's plan to achieve its e-government targets. The plan is also anchored on the three major pillars of the Philippine Development Plan (2017-2022) and claims to be a product of the previous ICT initiatives pursued by government. In particular, EGMP 2022 envisions the attainment of a "digitally-enabled" government that is capable of integrating its services across organizational and functional boundaries. This vision is characterized by a seamless service

BOX 1 . GENERAL INTENTIONS OF THE PDTS 2022

- Develop user-generated content and encourage the use of open source technologies
- Promote openness by providing online access to information and services
- Encourage collaboration among stakeholders in developing DT related content
- PDTS 2022 also supports the anti-corruption drive of the government and recognizes the importance of data privacy and cybersecurity in creating a digital society

SOURCE: EGMP 2022

BOX 2 . OBJECTIVES OF EGMP 2022

a) Optimize government operations
   - Provide a more efficient service delivery platform
   - Integrate e-government systems, enable knowledge, information and resource sharing as well as database building

b) Engage citizens
   - Unlock insights that improve citizen services for greater connection and participation
   - Ensure the delivery of digital public services to clients are fast, cost efficient, and accessible

c) Transform services
   - Facilitate business transactions through streamlined processing of licenses, permits and fees (simplify requirements and streamline procedures)

d) Empower government employees
   - Deliver productivity gains that can improve impact
   - Enhance the capacity and capability of government workforce to improve the internal efficiency and public service delivery

SOURCE: EGMP 2022 PAGE 17

delivery, an enhanced bureaucracy, and a transparent and open government. Box 2 enumerates the objectives of the EGMP 2022.

In addition to these objectives, the EGMP 2022 also presents itself as a vehicle for digital transformation through the following outcomes (Ibid, page 20):

(a) EGMP 2022 is expected to bring cohesion to all ICT programs of the government: This means that the plan is expected to harmonize the existing programs related to e-government in the Philippines.
(b) It is expected to rationalize all ICT initiatives in government by developing a standards-based framework: This means that the plan serves as a tool to promote collaboration and integration of public services.
(c) Develop human capacity, encourage collaboration and information sharing across government, and promote a culture of privacy and security. EGMP 2022 is expected to usher in the change in mindset and culture needed for DT.

In line with the EGMP 2022, the National Government Portal was launched in June of 2017. Also, the DICT is continuously expanding its fiber optic network coverage in accordance with the goals of the National Broadband Plan.

Enabling Laws for digital Transformation: DICT Law, Ease of Doing Business Act and the PhilSys (National ID) Law

The law creating the Department of Information and Communications Technology (RA 10844) provides the needed institutional foundation for the development of policies and applications for the use of ICT in government. The DICT also has regulatory supervision of the telecommunications industry and has a mandate to ensure compliance with the Data Privacy Act.
In line with the Philippine Development Plan (2017-2022), the enactment of the Ease of Doing Business Act (RA 11032) and the National ID law underscores the importance of improving the country's competitiveness rating and the delivery of basic services to citizens.

TABLE 2 . SELECTED PROVISIONS OF RA 11032

	SUMMARY	KEY POINTS
Ease of Doing Business Act **(RA 11032)**	This law is intended to replace the Anti-Red Tape Act of 2007. It mandates the streamlining of procedures for business permits and licenses through automation. Emphasized the need to efficiently deliver public services, eliminate graft and corruption and improve the country's competitiveness ratings	The law mandates the creation of the following: o Philippine Business Data Bank- this data bank pertains to the creation of registries that can be aggregated through an online portal o Central Business Portal- the portal serves as the single entry point for transactions. It is envisioned that this can be done through the national government portal. o Prescribed processing time- the law contains a prescribed processing time for simple and complex transactions o Zero contact policy- the law prohibits physical/face-to-face contact related to public transactions

SOURCE: EASE OFDOING BUSINESS ACT

TABLE 3 . SELECTED PROVISIONS OF RA 11055

	SUMMARY	KEY POINTS
National ID Law or the PhilSys Law **(RA 11055)**	This law mandates the implementation of the Philippine national ID system of PhilSys. PhilSys provides every Filipino citizen with a unique ID number that can be used to transact with government and the private sector.	- Each ID contains a PhilSys Number (PSN) wherein each number is unique and randomly generated through registration by the PSA (Sec 7.a). It contains the following information: the PSN, full name, sex, blood type, marital status (optional), place of birth, date of birth, address, and a photograph. (1); - The use of the PhilID shall be honored in all transactions that requires verification or proof but not limited to: applications for eligibility with regard to social welfare and different benefits coming from the government, application for different services such as GSIS, SSS, PhilHealth, and others., Application for passports and driver's license, tax-related transactions, voting application, admission to government hospitals or health centers, other government transactions, application to schools, application and transaction for employment purposes, opening of bank accounts or with other financial institutions, verification of a person's criminal record, and more.

SOURCE: NATIONAL ID LAW

In particular, the Ease of Doing Business Act aims to improve service delivery and cut red tape through the automation of the business permit and licensing systems of local governments. It also envisions the creation of digital registries of business entities that can be aggregated through the national government portal. These integrated registries can provide government with valuable information about the business entities in the Philippines. In addition, the law mandates streamlining of procedures for licenses and permits through automation of processes, the adoption of a unified application form and the establishment of one-stop shops. Table 2 provides the key points of RA 11032.

Furthermore, a closer look at the law's implementing rules and regulations (IRR) reveal the intent to achieve the integration of government transactions systems. This is a significant development since there are ongoing initiatives related to the whole-of-government interoperability as reflected in the EMGP 2022 and PDTS 2022. Therefore, this law provides the required legal muscle to further pursue these goals.

Another significant development is the enactment of RA 11055, otherwise known as the National ID Law or the PhilSys Law. This law finally mandates the creation of a PhilSys Number that serves as a unique identifier for every Filipino citizen. This new ID allows citizens to transact with government and the private sector. The law also underscores the importance of achieving the seamless delivery of public services, thus improving efficiency and transparency. Table 2 shows the key tenets of RA 11055.

Ultimately, providing Filipinos with unique identifiers through the PhilSys will facilitate the creation of registries and databases. These electronic repositories can allow for the efficient use of data for public transactions. Moreover, these registries can be used as inputs to data-analytics solutions that can provide crucial insights for policy making, examples of which include the summary of citizen-centric information through data aggregation as well as the visualization of trends and relationships of variables.

FIGURE 2 . INPUTS AND PROPOSED ACTIONS POINTS FOR THE PDTS 2022

SOURCE: PDTS 2022

In addition, online portals can provide citizens and the private sector with a single-entry point thus making it convenient to transact with the government. It can also cut operational cost by promoting service integration and eliminating redundancies.

Overall, these laws and programs can provide the needed impetus for DT in the Philippines. Policy makers and DT advocates can use the provisions on seamless integration of public services, creation of registries, clustering of services among others to push for DT applications and practices.

ACTION POINTS FOR DIGITAL TRANSFORMATION

Figure 2 provides an overview of how current PDTS 2022 can benefit from the existing laws and programs. The discussion ends with the suggested themes or action points. These action points can provide policy makers and DT advocates to further develop the DT vision for the Philippines.

a) *DT requires whole-of-society approach*
This approach pertains to the ability of DT to unleash the creative resources of a nation. Similar to the experiences of Estonia and Singapore, DT must be able to mobilize state resources while strengthening the participation of the private sector, civil society, the academia and citizens. For this, strategic communications is critical. DT should be presented not only as a continuation of previous programs or "business as usual," but as "business unusual" stressing the need for creative destruction when it comes to existing governance practices. Moreover, the value proposition for DT must be made clear. It must be stressed that it is not only achieving digital society, but it should emphasize that DT is a tool that can address problems and create opportunities.

Another important aspect is the definition of roles. For instance, the Estonian example mentioned the active participation of its private sector in the development of its flagship ICT programs like the X-road. It also stressed the importance of providing flexibility among government agencies in developing their own ICT applications with the condition of interoperability through the X-road. Singapore's innovation hubs placed a premium on the potential contributions coming from its private sector and start-up companies.

In the Philippines, its current whole-of-government approach for e-government is commendable. In fact, many of these initiatives are still ongoing and must be expedited. However, much of these activities are a continuation of the previous e-government and infrastructure development programs. The PDTS 2022 should have the foresight to define the future state of a true Philippine digital society beyond e-government and internet bandwidth. It should define its own DT brand. For this, the creation of a concise road map is highly suggested. This map can specify the DT milestones and targets, thus providing a clear direction and eliminating ambiguities. The road map can enable the various sectors of the society to identify opportunities for participation. The road map can also define its maturity targets by defining the various phases of DT. This is helpful in providing policy makers with concrete measures on how to assess its accomplishments.

b) *DT is value-driven, impact-oriented*
As stated previously, there is a need to define the value proposition of DT and identify its possible outcomes. Defining the value proposition should be guided by the emerging views of DT and the potentials of new technologies to transform governance. For this, simply adhering to new public management practices are inadequate. DT calls for transformation of governance models and practices. Incremental improvement in service delivery, automation of business processes, and having service portals are components of e-government and fall short of the expectations for DT.

In addition, the PDTS 2022 alignment to the current PDP and the country's SDGs is a step in the right direction. This position allows the PDTS 2022 to be part of the country's development aspiration. However, the exact contribution of the PDTS 2022 should be highlighted. For this, PDTS 2022 must be able to exploit opportunities available under RA 11032 (Ease of Doing Business Act) and the RA 11055 (National ID Law). For instance, the automation of business license and permit issuance procedures and the creation of a national/Philsys ID can both provide opportunities for DT. The Philsys ID can allow citizens to access online services as provided for in RA 11032. Using multiple access devices and block chain technology, a citizen can safely transact with government through the national government portal. The creation of digital registries prescribed in RA 11032 can also serve as data sets for the use of data analytics software. This can provide valuable insights on transactional patterns that in turn contribute to data driven policy making.

Another value proposition for DT is its ability to promote e-Democracy. Similar to the Estonian experience, the Philsys ID can be used to pilot and eventually adopt online election systems. This practice has the potential of eliminating irregularities and increase the credibility of elections in the Philippines. Furthermore, social media can be used for crowdsourcing activities as well as a gauge for measuring public opinion through semantic analysis techniques.

c) *DT is change and change is inevitable*
Change is definitely coming if DT is viewed and adopted correctly. DT is more than just business as usual or mere compliance. The literature points to the need to adopt a critical and destructive perspective in advocating of digitally enable transformation. For this, it is important to develop the relevant skills and create an environment that can facilitate and support DT initiatives. Private sector practices such as sandboxing, adoption of agile models, exploring machine learning, artificial intelligence and robotics can provide the needed tools for DT-enabled innovations. Lastly, streamlining of structures and procedures are inevitable by products of DT. Policy makers and DT advocates must consider change management interventions to cushion the possible adverse effects of DT to the bureaucracy.

d) *The power of incentives*
DT aims to encourage critical examination of current practices and develop new ways of creating value. To encourage its adoption in government, policy makers and planners should design an incentive program that aims to hasten its implementation. For instance, through grants for the private sector, government can promote the development of innovative solutions and practices. Similar to the Singapore model, the creation of innovation hubs is also a good way of encouraging collaboration among start-ups, the academe, and citizens. Lastly, government can also support DT initiatives by recognizing the best practices in the public sector. Recognition schemes such as Land Bank's Galing Pook and Good Housekeeping award of the DILG can serve as useful models to incentivize DT in government.

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12.9

VOLUME

ABOUT

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