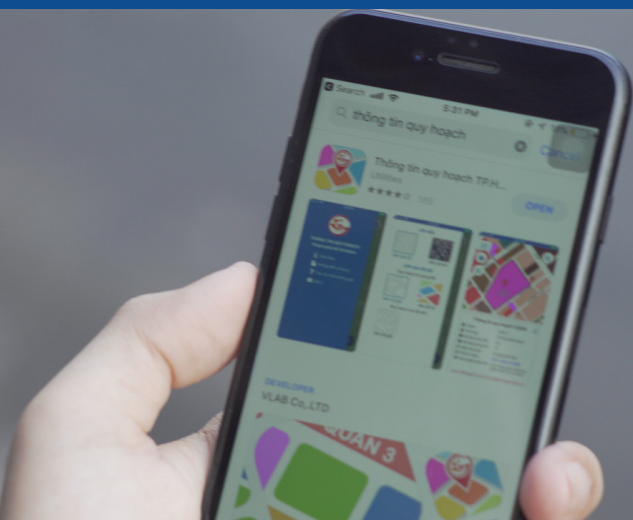**WORLD BANK GROUP**

VĂN PHÒNG CHÍNH PHỦ

Digital Government and Open Data Readiness Assessment

Prepared for the Government of the Socialist Republic of Vietnam

February 2019

Digital Government and Open Data Readiness Assessment

February 2019

DIGITAL DEVELOPMENT PARTNERSHIP

Australian Aid

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Abbreviations and Acronyms

APCA	Administrative Procedure Control Agency
CoST	The Construction Sector Transparency Initiative
DG	Digital Government
DGRA	Digital Government Readiness Assessment
GSO	General Statistics Office
GSRV	Government of the Socialist Republic of Vietnam
HCMC	Ho Chi Minh City
MARD	Ministry of Agricultural and Rural Development
MIC	Ministry of Information and Communication
MoNRE	Ministry of Natural Resources and Environment
MoET	Ministry of Education and Training
MoF	Ministry of Finance
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoJ	Ministry of Justice
MoPS	Ministry of Public Security
MoT	Ministry of Transport
MoST	Ministry of Science and Technology
MoIT	Ministry of Industry and Trade
MPI	Ministry of Planning and Investment
OCDS	Open Contracting Data Standards
OD	Open Data
OD4B	Open Data for Business
ODRA	Open Data Readiness Assessment
OGD	Open Government Data
OoG	Office of the Government
OpenDRi	Open Data for Resilience initiative
PAPI	Provincial Governance and Public Administration Performance Index
PAR	Public Administration Reform
PM	Prime Minister
PPA	Public Procurement Agency
SM	Social Media
SRV	Socialist Republic of Vietnam
VCCI	Vietnam Chamber of Commerce and Industry
WB	World Bank

Foreword

The technological revolution is changing the world very rapidly, with new technologies adopted in various fields and sectors, bringing about transformational advances in the entire socio-economic environment. Against the backdrop of modern technology with a gigantic volume of data all over the world, many countries have conducted assessments to gain understanding about the current status of E-Government development, data management, and readiness for development of Digital Government and Open Data in order to form a digital strategy relevant for their countries in the own contexts.
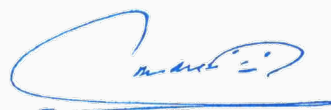
Being aware of the importance of E-Government in helping to reverse corruption, push administration reform and improve the investment and business climate and recognising that it is imperative for Vietnam to seize opportunities brought about Open Data and digital government to leapfrog, accelerate and advance forward, in 2018, the Prime Minister assigned the Office of the Government of Vietnam to work with the World Bank and relevant Ministries and agencies to conduct a Digital Government Readiness Assessment and an Open Data Readiness Assessment in order to have elaborate assessments and to devise a relevant strategy based on the assessments.

The Digital Government Readiness Assessment aims to find out about the potential for digital government development in Vietnam by looking into 07 key dimensions: Leadership and governance; User focus; Business Process Change; Capabilities, cultures and skills; Shared infrastructure; Data-driven policy making, and Cyber security, privacy, and resilience. The Open Data Readiness Assessment looks at Vietnam's ecosystem for Open Data by examining eight (08) key dimensions: Senior Leadership; Policy/Legal Framework; Institutional Structure; Data within Government; Demand for Open Data; Civic Engagement and Capabilities for Open Data; Funding; and Technology and Skills Infrastructure. By examining the dimensions, the report provides the Government a realistic and holistic view to support efforts to move towards Digital Government and Open Data, and recommend a comprehensive action plan for the whole government and society.

The Digital Government Readiness Assessment and Open Data Readiness Assessment Report will serve as an important reference document for the Government of Vietnam, Ministries, agencies, and concerned organisations/entities in building on the results of E-Government development efforts so far and to continue to push the development of an enabling government and the digital economy.

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Acknowledgements

Disclaimers

The DGRA and ODRA are diagnostic and planning tools, they are not measurement tools. These tools are intended to provide diagnostics and recommendations for action based on existing good practice elsewhere, but are not prescriptive, nor are they formal evaluation exercises. The output of any diagnostics, even following the guidance in these tools, needs to be carefully and critically considered in the context of the particular circumstances in which it has been made. The purpose of these tools is to provide a plan for action for Open Data and Digital Government programs, as well as initiating a robust and consultative dialogue among relevant stakeholders. In that sense, use of these tools is the beginning of a process and not the end or result of a process. Using the tools will not guarantee a successful and sustainable program on its own; implementation is crucial to ensure success. This is a 'living' document and will be subject to continuous updating and revision based on experience from actual practice. In addition, other assessment tools are available, and these tools are not necessarily the only, or always the most appropriate, approach in all particular circumstances.

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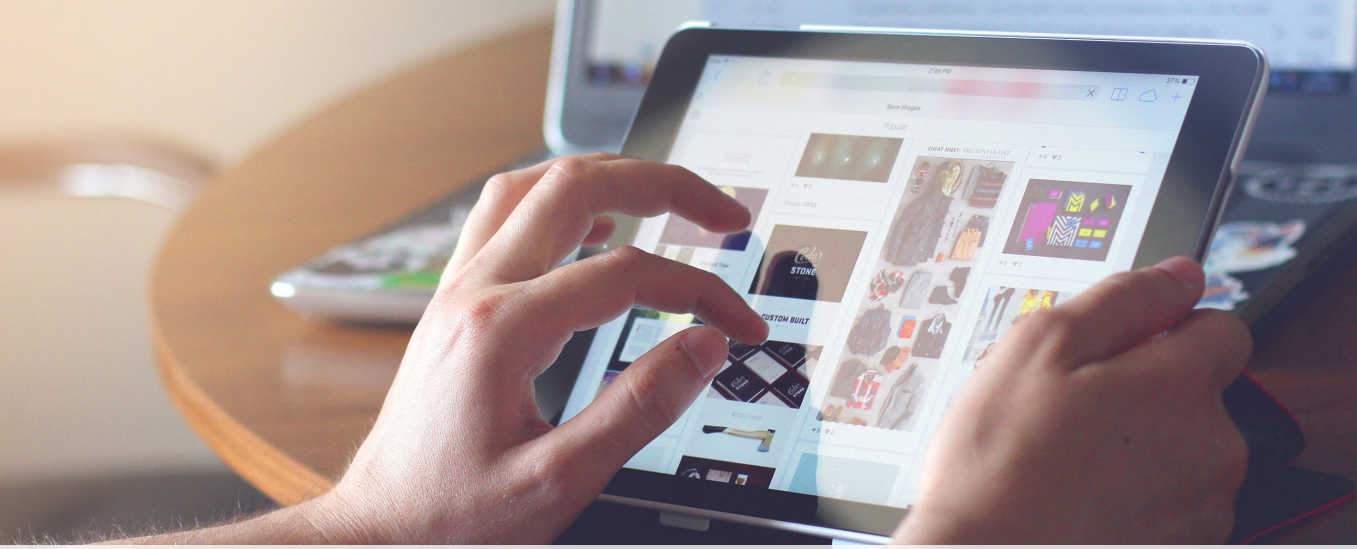
INTRODUCTION

Technological revolution is changing our world. New emerging technologies are incorporated in most industries all around the world, bringing market disruptions and societal and economic advances. In the midst of technologies, the world has envisioned and shared an understanding on future pathways, referred to as the "Fourth Industrial Revolution" or "Digital Economy" as a core concept to future development.

The "digital economy" is constantly evolving because of its multifaceted and dynamic nature due to rapid development of digital technologies. Over time, a narrow concept of the digital economy, previously linked only to the ICT sector and e-commerce, is being replaced by a broader one, that considers the new possibilities of such technologies to affect all aspects of life.

To promote and develop the digital economy in order to achieve social and economic benefits, it is necessary to understand the current state of technologies' use by private and public sectors, and population. In addition, it is important to assess the foundations of the digital economy, including digital infrastructure, digital platforms and solutions, as well as critical non-digital foundations such as legislation and regulations, leadership and institutions, environment for doing business and innovations, necessary skills and partnerships.

The Government of Vietnam (GoV) is progressing on the digital development journey by embracing Industry 4.0 and can benefit from a greater understanding of the current status of the underlying digital economy foundations. To that effect, this report provides assessments in the core areas of Digital Government and Open Data to help the GoV achieve their overall objective of reaping the full benefits of Industry 4.0.

However, different digital environment and capabilities of countries makes it imperative for government to recognize its digital status quo and set up a tailored digital strategy that fits

best for its state. With this regard, this report, composed of two separate themes of Digital Government Readiness Assessment (DGRA) and Open Data Readiness Assessment (ODRA), is intended to help government assess their digital environments and frame their own strategies.

In order to assess the potential for a Digital Enabling Government Initiative (DEGI) for Vietnam, this report compiles two chapters of aforementioned DGRA and ODRA. Specifically, it assesses potential opportunities and challenges of improving digital government and open data initiatives in the country. Although DGRA and ODRA are two separate assessments with different dimensions evaluated, they take a similar methodological approach from a broader point of view, starting with the desk research and later expanding to scoping mission. Therefore, both chapters of DGRA and ODRA are similar in format but outlined in respective assessment dimension and individual indicators. Since its onset in the fall of 2017, intensive desk research was conducted, and a field mission was carried out to confirm preliminary findings and uncover additional insight during a specific period in time, which means that during the course of analysis and writing additional developments could have been made. This is similar to the United Nations global e-government development report, which assesses progress during a "snapshot" in time.

DGRA, the first part of the report, aims to evaluate Vietnam's current potential for digital government development across seven key dimensions of leadership and governance; user focus; business process change; capabilities; culture and skills; shared infrastructure; data driven; and cybersecurity, privacy and resilience. Meanwhile, ODRA assesses Vietnam's open data policy through evaluating eight different dimensions of leadership; policy/legal framework; institutional structure; data within government; demand; citizen engagement; funding; and infrastructure.

The DGRA chapter focuses on digital government, which is a core part of Digital Economy as public sector delivers information and services more effectively and make them accessible to its citizens. Leading digital government states such as the UK, Australia, South Korea, and Singapore have seized on the socio-economic advantages of digital government, according to the biennial United Nations E-Government Development Index (EGDI) [1]. One of the advantages includes the cost reduction resulted from digital transactions, which is 50 times cheaper than traditional face-to-face transactions.[2] In the UN EGDI, Vietnam is currently ranked 88th out of 193 Member States, gaining one spot from the survey conducted in 2016. This rapid jump in the ranking in such a short period of time shows that the country has great potential to make further improvements.

The DGRA also measures the citizen's demand for digital government services as well as integration and infrastructure policies to delve deeper into the opportunities and challenges the country faces in its digital development journey. The assessment includes a step-by-step

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1   The UN EGDI is a useful tool to measure the supply of information and services provided to residents in the form of available services.

2   https://www.gov.uk/government/publications/digital-efficiency-report/digital-efficiency-report#introduction

analysis of specific components of digital government and presents an action plan to address the challenges identified for improvement.

ODRA, the second part of the report, focuses on the country's open data policy. Open data refers that the data must be both legally and technically open to public, thus placed in the public domain or under liberal terms of use with minimal restrictions, and that the data is published in machine-readable and preferably in non-proprietary electronic formats, which enables everyone to access and use data with freely available software tools.[3] The open data trend which has spread across the world in recent years has created a growing demand for open data policies, with especially strong demand from the government side. While the developed countries of the world like the UK and the US have been the early movers in adopting open data policies, demand is also escalating in the developing regions.

According to a recent series of micro and macro-economic studies, governments adopting open government data initiatives brings more transparency, efficiency and innovation that creates opportunities for the private sector as well as enabling citizens to improve their lives. However, achieving these positive impacts of open data requires a series of elements such as strong leadership; an enabling legal environment that pushes all agencies to publish data in a timely manner in a standard and documented format; capacities of agencies to engage with such publication process; capacities of non-governmental actors to exploit published data; high level of IT infrastructure both at the government and the country level.

Therefore, in order to design a powerful roadmap to develop an Open Data ecosystem, it is essential for a country to start with a thorough evaluation of the different elements involved. The World Bank's ODRA Framework is valuable in this sense as it uses an "ecosystem" approach to open data, looking at the larger environments for open data from both supply and demand sides   prime examples of supply side issues include the policy/legal framework; government data and infrastructure (including standards); and the demand side issues contain citizens engagement mechanisms and existing demand for government data among user communities (such as developers, the media and government agencies). The ODRA assessment also includes designing an action plan to leverage the comparative strengths and address the challenges identified during the process.

Although the DGRA and ODRA take a similar methodological approach, there are also important distinctions between the two as they were designed for two different topics of digital government and open data. For example, one of the ODRA assessments in this report includes the CIVIC ENGAGEMENT AND CAPABILITIES FOR OPEN DATA dimension in a yellow-green scale and the NATIONAL TECHNOLOGY AND SKILLS INFRASTRUCTURE in green. Meanwhile, DGRA assesses a similar dimension CAPABILITIES, CULTURE AND SKILLS but in a yellow-red scale. The reason mainly comes from different remits in dimensions – ODRA covers a broader remit in this dimension by taking non-government actors into account, where

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3   http://opendatatoolkit.worldbank.org/en/essentials.html

an area Vietnam is perceived as doing well. By contrast, the DGRA assessment in this dimension only evaluates skills within government agencies, an area found to be particularly weak as digital talent often goes to work in the private sector.

This report, bringing DGRA and ODRA assessments altogether, aims to help raise awareness of digital government and open data, two critical topics as Vietnam prepares its next step for the fourth industrial revolution (Industry 4.0). Further, it hopes to serve as a useful resource for the top government leadership in identifying areas of relative strengths and weaknesses to help improve digital government and open data at the same time. To this end, each chapter contains a summary table of each dimension as well as a recommended action plan to address areas of weaknesses. Details of both reports, including specific methodologies and findings, are outlined in the next two chapters following a similar structure: an introduction, followed by an overview of each dimension that has been assessed for the respective reports, a conclusion, and an action plan.

It should be also noted that this report provides a snapshot of the country in time. The questions are assessed to produce recommendations that offer a conversation starter on the current readiness to the implementation of digital government and open data. The questions and assessments can be updated dynamically to reflect changes in policy or enabling environment. In the meantime, it should be noted that the recommendations are only guidelines and do not replace detailed assessments and planning that are necessary for a successful implementation of digital government development and open data.

Information and data utilized for the assessment were updated upto January 2019. Since then until the publication of this Assessment, the Government of Vietnam has achieved many progresses in the e-Government implementation, particularly the issuance of the Resolution 17/NQ-CP on some key solutions and tasks to develop e-Government in the period 2019-2020, towards 2025. In addition, several important Schemes have been started its implementation, including the e-Cabinet, the e-Services, the National Document Exchange Platform. Due to happening after the period of collecting data and information for this Assessment, those progresses were not included in the Assessment.

Country Context [4]

Vietnam is a country in Southeast Asia bordering China in the north and Laos and Cambodia in the west. Administratively the country is divided into 5 municipalities and 58 provinces, with a population of 92,701,100 (2016) living in an area of 330,967 km². Hanoi is the capital of Vietnam and Ho Chi Minh is the country's largest city.

From an economic development perspective, Vietnam is ranked among the lower-middle income countries by the World bank (WB) with a GNI per capita at $2,050 (2016). Agriculture represents 17% of the GDP, industry takes up 39% and services occupies 44% of it.

The country has enjoyed its torrid pace of economic growth over the last 20 years, with an average of 7-8% annual growth rate. The growth has been mainly driven by a shift from a centrally-planned economy to a market-led one with the initiation of the 'Doi Moi' reform in 1986, which shifted the economic structure away from agriculture to manufacturing and services, cutting down the agriculture's contribution in GDP to below 20%. In the meantime, this rapid economic growth and development has transformed Vietnam from one of the world's poorest nations to a lower middle-income country. During the same period, the country's poverty level has also drastically decreased moving from over half of the population living with less than $1.90-a-day in 1993 to only less than 3% of the population today. The proportion of the population living below the national poverty line (GSO-WB Poverty line) reached 13.5 percent in 2014—down from close to 60 percent in 1993. More than 40 million people escaped poverty over the course of two decades.

About noticeable evolutions, a stock exchange opened in 2000 and, after 12 years of negotiations the country joined the World Trade Organization in January 2007. Since then, Vietnam concluded the negotiation, signed several free trade agreements, including the EU-Vietnam Free Trade Agreement (the negotiation has been concluded, the agreement has not been signed), the Korean Free Trade Agreement, and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

From a political perspective, most of the power and policy making is with the Communist Party of Vietnam (the "CPV"), led by its Politburo and Executive Secretariat. The National Assembly is the highest political body. The President, appointed by the National Assembly, is the head of the State, and represents Vietnam in domestic and foreign affairs. The executive

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4   The sources of data used in this section are from http://www.worldbank.org/en/country/vietnam/overview https://data.worldbank.org/country/vietnam http://www.unido.org/office/vietnam/country-context.html https://www.cia.gov/library/publications/the-world-factbook/geos/vm.html https://www.duanemorris.com/articles/static/odell_inpr_aut08.pdf and https://en.wikipedia.org/wiki/Provinces_of_Vietnam

branch of Vietnam's government, which consists of various ministries, is headed by the Prime Minister.

Vietnam is also one of the most open economies in the world. The openness of economy is equivalent to 140% of GDP. Vietnam has official diplomatic relations with 185 countries as well as economic – commercial – investment collaboration with 224 international partners. It actively participates and contributes to 70 multilateral organizations. The country has strategic partnership with 15 partners and comprehensive partnership with 10 nations, including countries that are permanent members of United Nations and G7 Group. Enterprises from 110 countries and territories are investing USD 290 billion (USD 139 billion of which has been disbursed) into Vietnam. More than 60 countries and international donors have committed about USD 85 million of ODA (USD 50 billion has been disbursed) to support its infrastructure and poverty reduction. Vietnam is recognized by 64 countries as a market economy. It has signed and been negotiating 16 free trade agreements with 59 partners that represent 65% of world population, 90% world GDP and 80% international trade volume.

Vietnam started a program to develop e-Government along with its administrative procedure reform in early 2000s and has achieved certain results. Nevertheless, the implementation process is slow and limited in terms of impacts on the country's socio-economic development. Regarding the development of digital government and digital economy, the Government's current approach is notably different from e-Government approach. Since the beginning of the process, the Government has paid attention to and had a clear perception of potential opportunities and threats posing the country in the context of the 4th Industrial Revolution. From the initial opinion of the Prime Minister Nguyen Xuan Phuc after his inauguration expressed at the "Hanoi 2016 – Investment and Development Cooperation" Conference in June 2016 to his remarks at the Dialogue with representative from big multi-national corporations within the WEF agenda at Davos (January 2019), that is "Vietnam is willing to facilitate and accompany with you all here to realize strategy, action plan to foster the development during the period of digital transformation, setting up a 4.0 industry"[5], Vietnam has proved its determination in implementing reforms to become more proactive and innovative, in restructuring the economy along with renewing growth model to leverage opportunities that enable the country to develop faster.

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5   http://thutuong.chinhphu.vn/Home/Hay-den-va-tao-ra-cac-san-pham-40-tai-Viet-Nam/20191/29414.vgp

DGRA Executive Summary

Digital government is recognized as a key initiative towards public administration reform and an increased transparency while it is also time-saving, cost efficient, and minimizing effort for both the government and users (citizens) as indicated by a recent speech by Prime Minister Nguyen Xuan Phuc.[6] The purpose of DGRA is to evaluate the current potential for digital government development across seven key dimensions: 1) leadership and governance to understand high-level support; 2) user focus to understand the demand from people and organizations; 3) business process change to evaluate more efficient processes; 4) capabilities, culture and skills to identify room for adoption; 5) shared infrastructure to evaluate efficiencies in implementation; 6) data driven to understand the role of data in supporting effectiveness; and 7) cybersecurity, privacy and resilience to assess potential adverse consequences from digital development and map out strategies to mitigate the risks.

What is Digital Government?[7]

Governments around the world are continually facing the challenges of improving the access to and the quality of public services that they deliver to citizens and businesses while at the same time doing so more efficiently and with lower costs. For many years "e-Government" has been expected a major contribution to meeting these challenges.

Yet governments who have been seen as some of the leaders in e-Government have now embarked on the next stage of their service transformation journey - often referred to as "Digital Government". While building on the investments and transformation made during the earlier phases of e-Government, and while some of the principles are still being developed, the next stage has a sharper focus on the business principle that digital services should be the principal channel for government services - "Digital by Default". In order to achieve this, the leading governments are planning transformation throughout the entire service delivery chain: by introducing User-Centered Service Design so that citizens have digital services that they prefer to use; by leveraging wide-spread mobile technologies by transformation of business processes to be digital from end-to-end; by using authoritative data rather than documents for decision-making; by introducing and using common services consistently across government; by renewing their ICT architecture, upgrading their ICT infrastructure and consistently moving to the cloud; and by developing new leadership and governance models.

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6   http://vietnamnews.vn/politics-laws/427970/e-government-pushes-reform-pm.html#4CVVq7WtGukkP7wF.97
7   This is based on the World Bank methodology 0.4.1 as of December 2016; see annex for details

To help governments understand and plan for their progression to Digital Government the World Bank have developed this methodology for collaboratively assessing the current situation of a government and for developing a vision and strategy for the government to move forward with Digital Government. It is deliberately action-orientated as well as diagnostic, and it is specifically focused on the issues faced by public bodies in adopting digital methods – recognizing that successful digital practices from other sectors cannot always be readily adapted to public service requirements.

The assessment was carried out in collaboration with the Office of the Government (OoG) through the Administrative Procedures Control Agency (APCA). The key findings are as follows:

- • The Government has made a strong policy commitment to the global trend of the fourth industrial revolution (Industry 4.0). There are numerous regulations in place to assign roles and responsibilities, and to provide guidance for digital government development. OoG through APCA is designated as the lead agency in monitoring implementation across government agencies. The Ministry of Information and Communication (MIC) is tasked with setting technical standards while several other ministries provide support in specific areas. Although there is a control tower, non-existence of a clear national overarching roadmap at the highest level nor an implementation strategy with adequate resources hinders the government from moving forward with the digital government agenda. The e-Government Resolution is still in the drafting phase.

- There is the evidence of technical improvements as a foundation for digital government. MIC has issued e-government architecture standards and identified the need to develop six key national databases for future data-sharing. Further, number of agencies have begun using emerging technologies such as big data & analytics and cloud computing. However, these processes are siloed, and there are yet no clear standards or policies in important areas such as: Government cloud, Government data management, Government IT procurement, or Government information systems interoperability, which are the components of a Government digital platform that offers economies of scale. In the coming time, the issuance of e-Government Resolution, which is in the drafting phase, and the implementation of the issued Resolution afterward will expectedly contribute to improving this fact.

- The main challenge facing further digital government development, however, is a lack of coordination and collaboration framework between various agencies and initiatives, even though there is a "National Committee of e-Government " established based on the consolidation of the previous National Steering Board of ICT application and chaired by the Prime Minister and there are/will be Steering Board of e-Government established at each province and ministry. In this structure, there is no position titled CIO for the whole Government, which may causes inconsistency in enforcing and implementing directives and commands about digital Goverment. Compounding the challenge of further development is a lack of financing and skills within the government. Top talent

in the country primarily go to work in the private sector where salaries are higher, which makes it difficult for government agencies to attract and retain them.

DGRA is a tool designed to provide a high-level assessment. The World Bank has more detailed toolkits available to evaluate additional dimensions such as cloud computing and cybersecurity. The findings presented here, however, indicate that the government have adopted a series of measures to strengthen current weaknesses. The assessment findings also include the need to develop an action plan accompanied by adequate resources, creating a government-wide CIO function, addressing a skills shortage in the public sector, enhancing performance monitoring, establishing standards surrounding emerging technologies, and prioritizing areas of development, including for the six key national databases.

Digital Government Readiness Assessment Results

Theme	Digital Government Readiness				
	Low				High
Leadership and governance: Digital government transformation comes with the need for adjustments including legal, institutional, technological, and cultural changes. Therefore, high-level political commitment is critical to helping the government make necessary reforms in a timely and effective manner. Leading countries in digital government have proven themselves to have strong political leadership, clear vision and strategy, effective governance and organizational structure, and secured funding resources.			*		
User focus: This section examines the consultation and participation of users in the design of services. Stakeholders involve both supply-side agencies (public administration and modernisation) and the demand-side (population and businesses). The Human-centered design methodology is an example of such a participatory approach for public service re-design. To ensure inclusive representation of all users, present and potential interviewees in this section include NGOs and social intermediaries.			*		
Business process change: Business process change is often the most neglected aspect of digital transformation and can make or break the success of digital government transformation. Key stakeholders are agencies in charge of reform and civil service modernisation.		*			
Capabilities, culture and skills: There is a need to distinguish between two different types of profiles and skills for civil servants - the ICT organisations and their contractors, and the business line managers. Key indicators include certification/accreditation. Type of training required ranges from project management, database management, data entry, customer support, etc.		*			

Theme	Digital Government Readiness				
	Low				High
Shared infrastructure: Shared infrastructure in the form of digital platforms and services, standards and interoperability, and management information systems provides fundamental building blocks towards greater digital government efficiencies in terms of cost reductions and improvements in information-sharing.		*			
Data driven: Digital government transformation relies to a great extent on data driven activities. The ability to collect, store, analyze, and share data using emerging technologies is critical to improve service delivery. Available data can be used to improve decision-making and also lead to enhanced efficiency and generate external benefits. Leading countries in this area have established national "basic data registers" that enable government organizations to use and share a set of standardized data for greater effectiveness.			*		
Cybersecurity, privacy and resilience: Digital government progress must be matched by strong cybersecurity, privacy and resilience efforts in order for users to maintain trust in public sector online information and services. Cybersecurity is particularly important to safeguard personal data and requires cross- agency and international collaboration to meet growing threats.			*		

The evaluation of each dimension is color-coded:

Green (G) means there is clear evidence of readiness

Yellow/Green (represented as light green in the table below) means that very minor efforts are required to meet the readiness criteria

Yellow (Y) means that evidence of readiness is less clear

Yellow/Red (represented as pink in the table below) means that some readiness evidences exist but are weak

Red (R) means there is an absence of evidence for readiness

15 Key Action Plan Recommendations across 7 DGRA Dimensions

Action	Time
LEADERSHIP AND GOVERNANCE: The Government sets up an independent authority for digital Government development OR elevate the status of the existing National Committee of e-Government to assume this role	3-6 months
LEADERSHIP AND GOVERNANCE: MoF in collaboration with MIC, OoG to issue necessary financial mechanism for e-Government, digital Government related activities	4-8 months
USER FOCUS: the Government an e-consultation portal	6-12 months
USER FOCUS: DG authority to create a digital by default policy	12-24 months
BUSINESS PROCESS CHANGE: OoG to create a priority list for the development of the six key national databases	4-8 months
BUSINESS PROCESS CHANGE: OoG and MIC to develop agile development standards	6-12 months
CAPABILITIES, CULTURE AND SKILLS: DG authority to create incentives for talent to work in the public sector	12-24 months
CAPABILITIES, CULTURE AND SKILLS: DG authority to create more training programs for IT staff in ministries and agencies	12-24 months
CAPABILITIES, CULTURE AND SKILLS: OoG and MIC to develop a roadmap for digital transformation, including bridging digital divides and improving digital skills	6-12 months
SHARED INFRASTRUCTURE: OoG and MIC to develop regulation(s) for cloud computing, including the establishment of a government cloud	4-8 months
SHARED INFRASTRUCTURE: OoG, MIC and DG authority to establish policy to use open standards and common platforms	6-12 months
DATA DRIVEN: DG task force to enhance performance monitoring as it relates to data collection, sharing and data driven decision making	6-12 months
DATA DRIVEN: OoG, MIC and DG task force to create a performance monitoring platform	12-24 Months
CYBERSECURITY, PRIVACY AND RESILIENCE: The Government issues necessary regulations on the protection of data and critical national infrastructure	12-24 Months
CYBERSECURITY, PRIVACY AND RESILIENCE: MIC and MoPS to create an annual cybersecurity awareness campaign	6-12 months

ODRA EXECUTIVE SUMMARY

Open data is a policy under which certain government-held data are made publicly available, with very few restrictions on access, in formats that both people and software can easily read and use for any purpose. The ODRA is an action-oriented assessment, based on a combination of desk research and stakeholder consultations, designed to assist governments in identifying actions required to establish an open data initiative. The methodology[8] explores 8 dimensions: 1) Senior Leadership that evaluates the Open Data vision, understanding and the champions at the highest level of the Government; 2) Policy/legal framework that explores how the country legal framework is supportive of the development of an Open Data Initiative; 3) institutional structures, responsibilities and capabilities within government that looks at how the Government works horizontally and what are the capacities of the different agencies that are usually critical in the implementation of an Open Data Initiative; 4) Government data management policies, procedures and data availability that map existing data assets, and data procedures within the Government; 5) Demand for open data that evaluates the awareness and existing OD-related initiatives within non-governmental actors mainly NGOs & CSOS, private sector, academia, media & journalists and startups and innovation actors ; 6) Civic engagement and capabilities for open data that evaluates the state of interactions between the Government and non-governmental actors, the state of the information society in the country, and the capacities in ICT in general within the society.; 7) Funding a program to open data program that investigates whether a budget is available for the setup of an Open Data initiative; 8) National technology and skills infrastructure that evaluates the state of IT infrastructure in the country.

What is Open Data?

Open Data means "anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness)." http://opendefinition.org

In the digital age, data is a vital resource for governments to design, implement and monitor public policies and services. Around the world, governments have realized that their data is a valuable resource but that it's underutilized both inside and outside official institutions. Putting data into

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8   http://opendatatoolkit.worldbank.org/en/odra.html - The methodology is also put in Annex of this report for reference.

the hands of people who can use it has the potential to unlock social and economic innovation, and greater collaboration with citizens and corporations.

Open Data is about making data of interest to the public broadly accessible and re-usable by humans and machines, free of any technical or legal constraints.

What Kinds of Data Are Being Released?

The open data governments release respect privacy and security requirements. This means no individually identifiable data are released, nor is any data that would post national security concerns. Except these 2 exceptions, all data produced by a national or local government can be published. Typical datasets released include:

- National and regional statistical data
- National and local budget data
- Public service location & performance data (schools, hospitals, water etc.)
- Crime and accident locations & statistics
- Geospatial, cadastral, weather and map data
- Transport timetables and routes

Datasets that include personally identifiable information can be published after anonymization.

How is Open Data published and used?

Governments typically coordinate and release data from multiple agencies through a central, secure, read-only location such as "data.gov" that makes it easy for users to find and use data. This location where data are published is called an open data portal. Countries benefit from the release of government data in many ways, some common examples include:

Promoting transparency and accountability

When budget and expenditure data are released, designers often visualize them to make them understandable to the general public. Citizens can also see which programs, services and agencies are getting funding and how money is being spent.

Releasing social and commercial value

Geospatial, transport and weather data are often used by companies to build new services. These services benefit citizens and create economic value and often lead to more efficient ways of doing things.

Increasing citizen participation and engagement

Releasing data often opens the door to feedback and engagement – parents are interested in the performance of schools, citizens want to report issues with public services and governments can become more responsive to national needs.

What is the difference between Open Data and more traditional publication of documents on Web sites?

The publication of data on an open data portal, while technically relatively similar to the publication of documents on a web site, is of different nature compared to the publication on a Government web site. The objective of a government website is to inform citizens directly, and web sites are designed for citizens. An open data portal is designed to host open datasets. The two core characteristics of an Open Data set are:

- The format: open datasets are published in a format that is technically open, meaning that the format used is a non-proprietary format and is exploitable by a computer program (e.g. csv, txt versus excel or pdf)

- The license: a dataset is open is it is published with a license (terms of use) that allows the reuse of the information for commercial and non-commercial purpose.

This differs from usual documents published on institutional websites.

The key findings from ODRA include the following:

- While the Government of the Socialist Republic Vietnam has recently made several important political and legal commitments to transparency having the new Access to Information law passed in 2016 which becomes effective in July 2018, the current legal context does not provide a clear framework for publication and reuse of Open Datasets. Given the criticality, in Vietnam, of the legislation to guide agencies and civil servants' actions, this is a major impediment to the development of a national Open Data Initiative.

- Many business interests – including ICT companies, tourism agencies, distributors, food producers and processors, and investors – need government data to conduct a detailed market research, plan investments, develop new innovative services and offer better services to consumers in Vietnam. In the same way, many civil society organizations have the capacities and are in demand of access to more government data to implement their actions. Finally, there is a nascent data journalism community.

- Given this demand, the capacities of the actors, and the ICT context in Vietnam, providing key datasets as open data would assist innovation and economic growth, ease the flow of information between national and subnational level, and support other government objectives such as the development of a performance monitoring framework. It would also help stimulate the internal development of the best-practice data management and ICT governance processes that a government increasingly relying on data and ICT needs to have.

It is recommended that the Government of the Socialist Republic of Vietnam implements an Open Data initiative under the leadership of the Office of the Government, and its agency APCA, and drawing on relevant expertise from the Ministry of Information and Communication, the Ministry of Science and Technology, the Ministry of Finance, the Ministry of Public Security, the Ministry of Natural Resources and Environment, the Ministry of Planning and Investment including the General Statistics Office, and the Ministry of Justice. It would be highly desirable,

for social and economic impact on short terms, to closely engage businesses in the project, through the Vietnam Chamber of Commerce and Industry.

Open Data Readiness Assessment Results

The evaluation of each dimension and primary question is color-coded[9]:

Green (G) means there is clear evidence of readiness

Yellow/Green (represented as light green in the table below) means that very minor efforts are required to meet the readiness criteria

Yellow (Y) means that evidence of readiness is less clear

Yellow/Red (represented as pink in the table below) means that some readiness evidences exist but are weak

Red (R) means there is an absence of evidence for readiness

Theme	Importance	Open Data Readiness				
		Low	Low / Medium	Medium	Medium / High	High
Senior Leadership: Existence of active, engaged, high-level support for Open Data	***			*		
Policy/Legal Framework: Impact of existing laws and policies on data dissemination, protection of personal information, and existing terms of use	**		*			
Government Capabilities: agency capacity to manage and disseminate data, coordinate standards and processes, and address procedural roadblocks	**			*		
Data Management & Availability: Whether existing policies facilitate data access, and whether key datasets are either already available or could be made available	**			*		
Data Demand: Which datasets are already being requested or used, and which communities could benefit from Open Data	***			*		

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9   The ODRA methodology is not a quantitative evaluation but a qualitative one. Some dimensions are more important than others. The methodology in annex presents the rationale for the colour coding scheme.

Theme	Importance	Open Data Readiness				
		Low	**Low / Medium**	**Medium**	**Medium / High**	**High**
Civic Engagement: Capacity of civil society and general public to engage with public sector as partners and innovators	**				*	
Funding: Direct and indirect availability of resources to support Open Data	*				*	
Technology and Infrastructure: Capacity and ICT skills among officials, infomediaries and the public	**					*

Key Action Plan Recommendations (in approximate chronological order)[10]

Immediate Actions (approximately Months 1-3)

Action	Timescale
The Government of the Socialist Republic of Vietnam (Prime Minister) to announce the launch of the Vietnam Open Data Initiative	Month 1
The Prime Minister to appoint an Open Data Task Force (ODTF) and give the Office of the Government political leadership on all Open Data and related issues.	Months 1-2
The Open Data Task Force to recruit its CEO and CTO as Open Data coordinator, and Open Data technical leader	Month 1-3
The OD CEO and the ODTF to develop a detailed roadmap for the Vietnam Open Data Initiative	Month 1-3
The OD CEO and the ODTF to develop full budget estimate for the Open Data initiative	Months 1-3
The ODTF to prepare and launch a data inventory and select a first set of agencies to be involved in the Open Data Initiative	Months 1-3
The ODTF to select an approach for the technical Open Data team and set it up.	Months 1-3

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10 See also proposed Action Plan on p. 163 for more information.

Short-Term Actions (approximately Months 3-6)

Action	Timescale
The ODTF to develop a specific legislation to support Open Data and provide a legal framework for agencies to publish open government data. This legislation should at least include criteria for release, agencies duties, designation of OD contact points in agencies, M&E plan, licensing, charging, and format	Month 3-12
The Ministry of Finance to update the Update the Law on Finance to remove the fee regulation for raw granular data provision	Months 3-9
The Ministry of Public Security to update the regulations on protection of State Secrets to define precisely without possible conflicting interpretations the exact set of data that have to be protected and should not be covered by the Open Data Initiative	Months 3-12
The ODTF to organize and launch a change management training, technical training to extract, transform and publish Open Data and communication campaign for high-level civil servants, access-to-information officers, data managers and IT personal.	Months 5-6
The ODTF to lead the setup of an Open Government Data portal, and the publication of key priority datasets that are already available (quick wins). This portal will be interoperable with and connected to the Itrithuc portal to maximize visibility and reuse of published datasets.	Months 3-9
The General Statistics Office to strengthen its skills on data anonymization through appropriate training and skills development.	Months 3-9
The General Statistics Office to develop and document reference data (geonames, addresses, etc.) to ease data mashup from various sectors and ministries	Months 5-9
The ODTF to develop a communication campaign targeting media, innovation sector and CSOs about the open data portals	Months 5-9

Long-Term Actions (Months 7 and beyond)

Action	Timescale
The ODTF to engage all agencies in the National Open Data Initiative and put in place automatic publication mechanism.	Months
7-24	12-24 tháng
The ODTF to develop a legislation on Personal Data protection	Months
12-24	24-36 tháng
The ODTF to work on a program of Open Datathon and competitions to promote innovation using Open Data.	Months 7-24
The ODTF to work with the Ministry of Science and Technology to channel some of the existing investment funds and competitions to support the creation of specific services or start-ups exploiting open government data	Months 12-24
The ODTF to setup advanced data analytics services as a revenue-generation service to cover Open Data costs	Month 24-36
The ODTF to work with the Ministry of Education to develop and expand Master of Science programs in data science in Vietnam national universities' curricula	Month 24-36
The ODTF to work with National Academy for Public Administration to develop and set of Open Data modules to raise awareness and prepare future public administration managers	Month 24-36
Each ministry to create the position and appoint a Chief Information Officer/Chief Data Officer to support more efficiently the publication of data	
The Government to setup an institutional home for Open Data and transition ODTF to the new home	Month 24-36
The Government to setup a data innovation lab to support both governmental and non-governmental actors to develop data skills, and exploit data for social and economic impact	Month 24-48

Key Quick Win and Priority Datasets Summary Table[11]

Dataset Category	Number of Datasets
QUICK WIN	29
PRIORITY	23

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11 See also complete table on Key Dataset Findings and Recommendations in Section C of the ODRA Annexes for more information, including a complete listing specific quick win and priority datasets.

2

DGRA

Overview

There is a vision for digital government in the context of Industry 4.0 with good leadership support, but not yet having implemented sufficient transformation to rate highly in any of the seven dimensions. The vision is indicated in several policy statements and regulations perhaps most notably in Resolution 36A/NQ-CP of October 14, 2015 on e-government, and there are sufficient laws, decrees, decisions, resolutions, and policy statements related to digital government. Based on them, a number of positive measures have been implemented including below:

- Resolution 36A assigns responsibility to OoG to coordinate with MIC and other relevant authorities to organize development of e-government. The ability of OoG is evident as it was able to set up a task force – led by APCA – with representatives across key ministries to plan and coordinate the World Bank mission(s) as part of this report. It illustrates the importance of having clear leadership at a high level that supports e-government development and provides the basis for a future permanent digital government task force.

- There are several policies and regulations laid out rendering various aspects of e-government, such as Decision No 1819/QD-TTg on October 26, 2015 on IT applications in state agencies in the period of 2016-2020; Decree No 43/2011/ND-CP on principles when building online public services; Circular Nos 26 and 28/2009/TT-BTTTT on web accessibility; and, Decision No 574/QD-TTg on April 25, 2017, on receiving and responding to online feedback, amongst others. The number of policies in place is a good foundation for further e-government development and assigning roles and responsibilities.

- Vietnam is generally considered to be above-average in e-government in the world. Past policies and regulations have clearly paid dividends. In the United Nations E-Government Development Index the country ranks 88 (out of 193 Member States), illustrating that

progress has been made in response to established policies. For instance, the objective of Resolution 36A is to have all ministries and agencies at level 3 by 2020, meaning that users can use them for online transactions (but not payments which is level 4). Development is also tracked annually by MIC, which issues a report based largely on the UN framework to track progress. This is an important undertaking to identify good practices across agencies and provinces and to uncover significant gaps in achieving stated objectives.

- There are isolated successful e-government achievements. For instance, digital transactions (level 4) are available in certain sectors and digital signatures are legally accepted, including for online tax refunds. MIC has also identified big data & analytics, cloud computing, IoT, blockchain and AI as emerging technologies for which there is a need to issue guidance in 2018.

Political support and clear policies and regulations provide the basis for further e-government development, as proven in many other countries. Despite the signs of good progress in this area; however, there are still significant gaps facing Vietnam that need to be addressed for the country to reap the full benefits of digital government. In fact, the mission assessment found that most dimensions are rated as Yellow or Yellow/Red, indicating that some progress has been made that could, over time, be replicated or integrated but that significant challenges remain in practice. They include:

- During the mission, the most frequently cited challenges by interviewees were a lack of financing and skills. Almost every agency mentioned a lack of resources to properly carry out their objectives. Funding is a common problem in e-government in many countries but policy-makers in successful countries view spending on digital government as an investment (which will save money over time) rather than a cost. A clear overarching road map (see next point) with associated ROI may be able to identify opportunities in this area. With regard to skills, most talent go to work for the private sector, where salaries are higher. Again, this is a common challenge in many countries, but leading ones have identified opportunities to try and overcome this problem to some extent by offering clear career paths and flexible working options for those with digital skills.

- There are numerous examples of strong support and interest in Industry 4.0, including recent policy statements by Prime Minister Nguyen Xuan Phuc. At the same time, digital government is not necessarily perceived as a part of broader digital transformation efforts but rather viewed in isolation. Specifically, there is a plan for e-government (Resolution 36A) but it is not part of broader government strategy. To improve digital government within the socio-economic context of digital transformation the topic needs to be elevated into an overarching road map to support such development and clearly integrated and linked to other digital initiatives.

- There are several stakeholders in digital government implementation: OoG, MIC (technical, ICT), MoST (standards, technology), MoF (budget and planning), and MoPS (confidentiality), amongst others. Although OoG is tasked with coordinating e-government development with MIC and across other agencies, the current APCA task

force will be dissolved after this report. There are currently limited coordination efforts in policy-making at high level beyond the task force. For instance, each Ministry has a specialized IT department whose director is part of a national board of IT directors; at the provincial level, departments have their own board and receive guidelines from MIC. However, these individuals are technical specialists and not policy experts.

- Besides a lack of coordination at the highest levels, there are also challenges regarding performance measurement and accountability. For instance, MIC tracks e-government development across agencies and provinces but there is no evidence that those who score high or low receive any additional recognition if they do well or assistance to improve if they fare poorly, other than being identified in the report. The MIC report is also targeting a specific area of e-government (supply-side delivery of information and services) and does not encompass broader performance measurement, such as demand-side preferences. The lack of performance monitoring and accountability results in poor data and information being reported to top leadership and is a key area in which improvements can be made. Despite good progress in isolated areas (such as implementation and acceptance of e-signatures, see above), there is a lack of standards and policies regarding emerging technologies for which the country must plan before it is too late. For example, some agencies are adopting and using cloud computing. However, the main benefits of cloud surround scale and interoperability and there is no government-wide cloud or standards in adoption. This can result in a lack of integration and costly modifications in the future. Moreover, common databases have been identified but not developed. Concerns remain around the ability to implement business process change and sharing information in practice, in particular given key concerns around funding and digital skills in the public sector.

Based on the assessment, it is recommended that the government adopts a series of measures to overcome current weaknesses and build on the positive attributes already in place. In the order of priority (based on the assessment) these are as follows:

1. Establish an implementation strategy at the highest levels of government that is integrated into national development strategy and accounts for addressing the digital skills shortage in the public sector.

2. Strengthen the role of OoG as the designated agency responsible for coordination by establishing a government-wide CIO function and a permanent high-level digital government authority.

3. Establish a budget clearly linked to the digital government development strategy and enhance accountability and measurement of ROI across agencies and provinces.

4. Establish standards surrounding emerging technologies and set short- and medium-term targets and track their progress through enhanced performance monitoring.

5. Prioritize areas of development in the new strategy, including the development of the six key national databases outlined in Decision No 714/QD-TTg on May 22, 2015.

Methodology

This "Digital Government Readiness Assessment" (DGRA) was prepared for the Government of the Socialist Republic of Vietnam (GoV). The DGRA framework derived from research into international best practice in digital government originally conducted, and the views of international experts originally collected, as part of the World Bank report "Digital Government in Russia 2020" presented to the Government of the Russia Federation in April 2016. The analysis showed that countries that had led the world in "e-government" had not fully achieved the expected benefits and were already moving to the next phase of "digital government," which emphasizes a greater focus on data, amongst areas, although the terms are used interchangeably.[12] DGRA is designed around the following principles:

- The assessment process is a collaborative partnership between the government and the World Bank.

- The assessment is not intended to "score" government efforts or to be used as a ranking. Although each dimension is rated on a qualitative scale for diagnostic purposes and to highlight the most important areas for action it is an indication of the work to do to reach best international practice rather than as a verdict on what has been done in the past.

- The assessment is intended to be action-oriented and hence an action plan for improving each of the seven dimensions is proposed.

- The assessment does not attempt to assess individual public services. Instead the methodology seeks to review the key factors which incentivize or constrain the adoption of digital government best practices for these services and make recommendations on strategic actions needed to further drive the adoption of digital methods.

- It does not go into detail on areas like Open Data that, although sometimes seem as part of a wider concept of digital government, are already covered by separate assessments by the World Bank (in this case in the next chapter).

This assessment included a scoping mission in Hanoi between 24 and 28 July 2017 and a field mission in Hanoi from 15 to 25 January 2018. The assessment was carried out in collaboration with the Office of the Government (OoG) through the Administrative Procedures Control Agency (APCA). The purpose of DGRA is to evaluate the current potential for digital government development across seven key dimensions: leadership and governance, user focus, business process change, capabilities, culture and skills, shared infrastructure, data driven, and cybersecurity, privacy and resilience. The assessment covers a number of questions across these dimensions in order to form an opinion of the current state of play.[13]

Within each dimension, the assessment considers a set of primary questions, and for each, notes evidence that favors or disfavors readiness. The evaluation of each dimension and primary

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12   This DGRA is based on the World Bank methodology 0.4.1 as of December 2016
13   This DGRA is based on the World Bank methodology "Digital Government Toolkit v11" as of April 2018

question is color-coded: **Green** (G) means there is clear evidence of readiness, **Yellow** (Y) means that evidence of readiness is less clear, **Red** (R) means there is evidence for absence of readiness, **Grey** (O) means insufficient information to assess readiness. When addressing a question, evidence of readiness has a "+" sign. Evidence against readiness has a "-" sign. Evidence that has mixed implications or neither favors nor weighs against readiness has an "o" sign.

It is important to note that the selection of a specific color for a specific dimension is always a difficult task. Given the specificities of the countries, and the fact that the legal environment as well as the organization of the government and the importance of technology are changing rapidly, colors have been used to reflect not only the state of a dimension/question but also to reflect the possible evolution in the near future. For instance, a red color means that element is assessed as unlikely to change in the near future, and there are no ongoing or scheduled activities likely to have a positive impact on the subject.

1. Leadership And Governance

Context: Digital government transformation comes with the need for adjustments including legal, institutional, technological, and cultural changes. Therefore, high-level political commitment is critical to helping the government make necessary reforms in a timely and effective manner. Leading countries in digital government have proven themselves to have strong political leadership, clear vision and strategy, effective governance and organizational structure, and secured funding resources.

1.1 Does the Government have a shared vision for digital transformation? A digital strategy linked to the national development agenda? YELLOW/GREEN

+ Commitment for digital transformation at the highest levels of government is strong and leaders understand the impact of Industry 4.0 and how it relates to national development.[14]

+ Decision No. 432/QD-TTg dated April 12, 2012 of the Prime Minister approving the strategy for sustainable development of Vietnam for the period 2011-2020, including enhancing the role of science and technology to implement sustainable development.[15]

+ The Prime Minister has placed great attention on administrative reform to enhance national competitiveness. In 2016, Prime Minister Nguyen Xuan Phuc specifically emphasized the importance of ICTs in Vietnam's development strategy.[16]

+ There is a recognition that digital government (e-government) is a key component of Industry 4.0.

+ In 2015, the government issued Resolution 36A/NQ-CP dated October 14, 2015 of the Government on to further improve in the area of e-government specifically.[17] A Government Resolution on e-Government development is in the drafting phase and expectedly issued in the first quarter of 2019 which will replace the Resolution 36A.

- In general, top leaders have a shared vision for digital transformation but there appears to be a lack of understanding at lower levels of government, according to interviews conducted for this report.

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14 http://www.nhandan.com.vn/chinhtri/item/32590502-thoi-co-va-thach-thuc-tu-cach-mang-cong-nghiep-4-0.html

15 http://www.chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails?categoryId=30&articleId=10050825

16 https://congnghe.tuoitre.vn/nhip-song-so/thu-tuong-nguyen-xuan-phuc-can-cuoc-cach-mang-cong-nghe-thuc-su-1176861.htm

17 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767; http://news.chinhphu.vn/Home/Resolution-oneGovernment/201510/25749.vgp

- More critically, there is no clear implementation road map, organization structure, nor funding resources attached to the various strategies and resolutions on digital government.

1.2   Is there a digital government act/law? YELLOW

+ There have been a number of different regulations related to e-government issued over the past decade, including:

  o Law No. 51/2005/QH11 dated November 29, 2005 of the National Assembly on e-transactions.[18]

  o Law No. 67/2006/QH11 dated 29 June 2006 of the National Assembly on IT Decree No. 64/2007/ND-CP dated April 10, 2007 of the Government on information technology application in the operations of state agencies.[19]

  o Decree No. 43/2011/ND-CP dated June 13, 2011 of the Government on provision of online information and public services on websites, portals of state agencies.[20]

  o Decision No. 1819/QD-TTg dated October 26, 2015 of the Prime Minister approving the National Programme on information technology application in state agencies in the period of 2016 – 2020.[21]

+ The main relevant regulation, however, is Resolution 36A/NQ-CP dated October 14, 2015 on e-Government.[22] Amongst other coordinating directions it assigns responsibility to OoG to:

  o "preside and coordinate with the Ministry of Information and Communications and relevant authorities to organize the development of e-government and deployment of solutions mentioned in this Resolution."

  o "preside and coordinate with the Ministry of Information and Communications, ministries, agencies and localities to implement the inspection, monitoring and review of the implementation of this Resolution and report to the Government at the last regular meetings every quarter. Implementation results of this Resolution shall be used to evaluate performance quality of each ministry, agency and locality at the regular meeting in December every year of the Government."

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18 http://mic.gov.vn/Pages/VanBan/10019/51_2005_QH11.html;   http://www.moj.gov.vn/vbpq/en/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=6109

19 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&_page=1&mode=detail&document_id=22395;   https://luatminhkhue.vn/en/decree/decree-no-64-2007-nd-cp-date-dapril-10--2007-of-the-government-on-information-technology-application-in-state-agenciesoperations.aspx

20 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&_page=1&mode=detail&document_id=101050;   http://hethongphapluatvietnam.net/decree-no-43-2011-nd-cp-of-june-13-2011-on-provision-of-online-information-and-public-services-on-websites-or-web-portals-ofstate-agencies.html

21 http://www.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=181898

22 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767; http://news.chinhphu.vn/Home/Resolution-oneGovernment/201510/25749.vgp

+ Vietnam currently ranks number 88 (out of 193 Member States) in the UN E-Government Development Index, up from number 89 in the last biennial survey.[23] One aim of Resolution 36A is to improve the country's E-Government Development Index score (EGDI) in the UN survey.[24]

- There are multiple regulations in effect without a consolidated strategy.

- There appear to be overlapping roles and responsibilities, and a lack of coordination in implementation in certain areas, especially with emerging technologies such as cloud computing.

1.3 Do top Government leaders (e.g., Ministers, Under-Secretaries, Departments Heads, etc.) understand, own and support the digital government vision? Are non-Government stakeholders included and consulted in the digital government strategy and implementation? YELLOW/ GREEN

+ Digital transformation in Industry 4.0 was the theme of the Vietnam ICT Summit 2017. The forum was attended by 650 delegates who are leaders of the Central Economic Commission, Party Central Committee, Government Office, leaders of Ministries, branches, Leaders of People's Committees, representatives of departments and branches of 45 provinces. At the forum Deputy Prime Minister Vu Duc Dam called for cooperation to make digital transformation successful.[25]

+ The Office of the Government (OoG) is tasked with cross-agency implementation of tasks according to Decree 92/2017/ND-CP on 07 August 2017.[26]

+ OoG was tasked with hosting the World Bank mission and designated the Administrative Procedure Control Agency (APCA) as the lead counterpart. APCA is the focal agency on public administrative procedural reform, which includes e-government, and has established a task force of 18 members, about half of whom represent OoG with the balance coming from other ministries.

+ In August 2018, the Government set up the National Committee of e-Government development, accordingly to which, OoG is tasked with standing body for the task force serving the Committee, the focal point, supporting the Committee to coordinate the development of e-Government, ensuring necessary conditions for the Committee's

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23 https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/189-Viet-Nam

24 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Nghi-quyet-36a-NQ-CP-Chinh-phu-dien-tu-292787.aspx

25 https://baomoi.com/viet-nam-chuyen-doi-so-trong-cach-mang-cong-nghiep-lan-thu-4/c/23207905.epi

26 http://ssc.gov.vn/ssc/faces/en/enlinks/endetail/investor/investorguide/enchitiet168;jsessionid=BWZphn 1GgKSg8YhgmGj330BhrKcVVQQXQHsnJpT1hySQ43Yxp42g!-582763598?dDocName=APPSSCGOV-VN162116927&_afrLoop=19926091065506794&_afrWindowMode=0&_afrWindowId=null#%40%3F_ afrWindowId%3Dnull%26_afrLoop%3D19926091065506794%26dDocName%3DAPPSSCGOV VN162116927%26_afrWindowMode%3D0%26_adf.ctrl-state%3D1dtfa085tf_4; http://vpcp.chinhphu.vn/

activities, promoting implementation of IT in different ministries and provinces, data integration, and development of national databases.

+ Several local cities and provinces appear committed to digital government, such as Da Nang, Ha Noi, and Ho Chi Minh City, which have the highest scores in the MIC assessment on available online information.[27]

+ Similarly, several ministries score well in information provision, including MoH, MIC, MoJ, MoNRE, MoST, and MPI.[28]

- There are numerous stakeholders in digital government implementation: OoG, MIC (platforms, IT systems, cyber security), MoST (standards, technology, startups, hosting open data portal), MoF (budget), MPI (planning & investment), MoJ (IT law), MoPS (state confidentiality, cybersecurity), and it is sometimes unclear to what extent collaboration is taking place in practice as it relates to specific topics.

- Although the Minister of OoG will work with the leader(s) of MIC, as well as other ministries, to discuss further collaboration on e-government after the mission, the APCA task force will be dissolved.

- There are great discrepancies between leading provinces and ministries and those that lag behind, indicating that digital government development is uneven.[29]

- In general, it appears that top leaders understand and support the digital government visions; however, there appears to be a lack of understanding at lower levels of government.

- Non-government stakeholders can provide feedback, including on government websites but it is unclear if suggestions are taken into account in strategy and implementation.

1.4 Is the government's vision/digital strategy communicated internally? And externally? YELLOW/ GREEN

+ Directive No. 16 / CT-TTg of May 4, 2017 on strengthening the ability to prepare for Industry 4.0

+ The Prime Minister signed Decision No. 1072 / QD-TTg dated 28 August, 2018 on the establishment of the National Committee for e-Government

+ Prime Minister Nguyen Xuan Phuc has repeatedly mentioned the importance of Industry 4.0 at external events, including at the Davos WEF in January 2019.[30]

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27 MIC 2017 report on current status of ICT application
28 MIC 2017 report on current status of ICT application
29 MIC 2017 report on current status of ICT application
30 http://thutuong.chinhphu.vn/Home/Hay-den-va-tao-ra-cac-san-pham-40-tai-Viet-Nam/20191/29414.vgp

+ Prime Minister Nguyen Xuan Phuc has also told government ministers to be cognizant of Industry 4.0.[31]

+ Decision No. 392/QD-TTg dated March 27, 2015 of the Prime Minister approving the target program on IT industry development through 2020, with a vision toward 2025.[32] The main relevant regulation is Resolution 36A/NQ-CP dated October 14, 2015 on e-Government, which is cross-cutting across key government agencies.[33]

- The vision is communicated externally and internally; however, actual implementation appears unclear.

- It has been noted that Vietnam's e-government ranking could be improved if ministries update data, review and correct their focal points, provide information, and increase the number of online public services.[34]

1.5 Does the government run digital government innovation competitions or awards? YELLOW/ RED

+ NATEC runs an innovation competition in which winners received seed money to develop their ideas, although they do not have to be related to digital government specifically.

+ There is funding from the state budget to hold an annual TECHFEST for start-ups, although they do not have to be related to digital government specifically.[35]

+ MIC publishes an annual report listing top performing agencies, ministries, and provinces in e-government; however, it is not an award in a strict sense.[36]

+ SBV in collaboration with the MBI/ADB organized the first competition on "Fintech Challenge Vietnam" in 2018 with the participation of 141 Fintech companies from 27 countries focusing on five core areas of Fintech, including (i) Electronic Customer Identification (e-KYC); (ii) Open Application Programming Interface (Open API); (iii) peer lending (P2P lending); (iv) Payment and (v) Application of Blockchain technology in order to promote innovation in financial services and promote further financial popularization in Vietnam.

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31 http://thutuong.chinhphu.vn/Home/Tranh-tinh-trang-cho-nao-cung-noi-cach-mang-cong-nghiep-40-nhung-khong-biet-lam-gi/20174/26259.vgp

32 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&_page=1&mode=detail&document_id=179362

33 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767; http://news.chinhphu.vn/Home/Resolution-oneGovernment/201510/25749.vgp

34 http://egov.chinhphu.vn/cai-thien-chi-so-chinh-phu-dien-tu-phai-sat-tung-viec-a-NewsDetails-37542-14-186.html

35 http://natec.gov.vn/innovatube-frontier-summit-su-kien-dau-tien-ve-cong-nghe-tien-phong-tai-viet-nam/; https://techfest.vn/en/homepage-3-2/; https://thuvienphapluat.vn/van-ban/Van-hoa-Xa-hoi/Quyet-dinh-844-QD-TTg-de-an-ho-tro-he-sinh-thai-khoi-nghiep-doi-moi-sang-tao-quoc-gia-den-2025-2016-311936.aspx

36 MIC 2017 report on current status of ICT application

- There does not appear to be a government-wide program for digital government innovation competitions or awards specifically.

1.6 Does the vision set specific goals for citizens, businesses, employees and other stakeholders? YELLOW/ RED

+   The vision sets specific goals in terms of supply-side provisions. For example, the objective of Resolution 36A / NQ-CP includes the aim to have 100% of ministries and central agencies at level 3 by 2020, meaning applicants can fill in and submit the forms online but not pay for the transaction.[37]

-   Decision No. 2545/QĐ-TTg dated 30 December, 2016 approving the scheme on development of non-cash payment in Vietnam during 2016-2020, which set forth the goal of cash payment over total transactions of less than 10 percent by 2020. Specific goals focus almost entirely on the supply-side of providing e-government information and services rather than setting demand-side ambitions.

1.7 Are there key performance indicators for measuring implementation of strategy? YELLOW/ RED

+   Based on Resolution 36A, The Prime Minister promulgated Decision No. 846/QD-TTg dated June 9, 2017 and Decision No. 877/QD-TTg dated July 18, 2018, issuing the list of public online services at levels 3 and 4 to be implemented by ministries, provinces and cities.[38]

+   There are also aims to improve e-government by international standards, such as in the online service index (OSI) in the UN e-government development index (EGDI).[39]

+   Performance monitoring is generally improved: all agencies and provinces now need to update on implementation status of tasks assigned by the government on a monthly basis. OoG can view what tasks have been completed and which ones have not.

+   Monitoring of citizen satisfaction has been implemented. The Ministry of Home Affairs adopted the Decision No. 2640/QĐ-BNV dated 10 October 2017 approving the project "Measuring the satisfaction of citizens and organizations with respect to the services of public administrative agencies in the period 2017-2020". In 2018, the Government also issued the Decree No.61/ND-CP on implementing one-stop shop mechanism, interlink one-stop shop mechanism in handling administrative procedures. The Decree mentioned about the task of evaluating the AP handling among many tasks. However, this task has

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37 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767

38 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=190018

39 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767

not been conducted in practice. Some localities such as Ho Chi Minh city, Da Nang, Binh Duong have also conducted the citizen satisfaction survey.

- Current performance monitoring is only in nascent stages; beyond the generic goals set out in the high level strategies and resolutions, there are limited granular targets and monitoring indicators to track the progress towards achieving those goals. As of now, there is no system to track effectiveness or outcome of various government strategies on e-government.

- Current agency reports, such as from MoST, are said to contain a bullet-point list of tasks without providing greater detail. The frequency of reports between agencies also appears to vary, and hence there is no consolidated view of progress across agencies.

1.8   Is there a clear implementation road map? YELLOW/ RED

+ The development of a roadmap for the provision of online public services by state agencies should be implemented in accordance with the guidance of the Ministry of Information and Communications in Official Dispatch No. 3386 / BTTTT-THH dated November 20, 2014 on the development of an online public service roadmap under the Government's Decree No. 43/2011 / ND-CP of June 13, 2011.[40]

+ The Prime Minister promulgated Decision No. 846/QD-TTg dated June 9, 2017 and Decision No. 877/QD-TTg dated July 18, 2018, issuing the list of public online services at levels 3 and 4 to be implemented by ministries, provinces and cities.

+ Based on Decision No. 1819/QD-TTg dated October 26, 2015, all ministries, provinces and cities must issue an annual plan until 2020.[41]

  o One example is Ha Tinh province.[42]

+ Based on Resolution 36A/NQ-CP dated October 14, 2015, the Prime Minister promulgated Decision No. 846/QD-TTg dated June 09, 2017, issuing the list of public online services at levels 3 and 4 to be implemented by ministries, provinces and cities.[43]

- The implementation of Decision 1819/QĐ-TTg and Resolution 36a/NQ-CP as well as the road map of e-government service provision have not been synchronized. There does not appear to be any accountability in case the road map is not followed.

40 http://www.aita.gov.vn/tin-tuc/1949/giai-phap-day-manh-cung-cap-va-su-dung-dich-vu-cong-truc-tuyen-dvctt-tai-viet-nam

41 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-1819-QD-TTg-ung-dung-cong-nghe-thong-tin-hoat-dong-cua-co-quan-nha-nuoc-2015-294230.aspx

42 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Ke-hoach-81-KH-UBND-thuc-hien-Nghiquyet-36a-NQ-CP-chinh-phu-dien-Ha-Tinh-2016-2020-313933.aspx

43 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=190018

1.9 Does the digital strategy have clear and quantifiable goals aligned with national priorities? Are these aligned with SDGs? YELLOW/ RED

+   The digital government strategy is aligned with the broader vision of adjusting to Industry 4.0.

+   Decision No. 622/QĐ-TTg dated May 10, 2017 of the Prime Minister approving the National Action Plan to implement the 2030 Agenda for Sustainable Development.[44]

+   The General Secretary of the National Council for Sustainable Development and Competitiveness, Nguyen Ba An, has noted the importance of Industry 4.0 for the Government to change its current approach to policy-making and implementation.[45]

-    Resolution No. 142/2016/QH13 dated April 12, 2016 of the National Assembly on the socio-economic development plan for the period of 2016 – 2020 does not appear to take the role of e-government into account.[46]

-    There are no clear and quantifiable e-government goals aligned with national priorities.

1.10 Is the digital strategy integrated into other national policies and plans as well as sector strategies? YELLOW/ RED

+   Resolution 36A/NQ-CP contains plans for specific ministries (which in turn handle specific sector strategies), such as the Office of the Government, Ministry of Information and Communications, Ministry of Finance, Ministry of Planning and Investment, Ministry of Planning and Investment, Ministry of Transport, Ministry of Education and Training, and the Ministry of Justice.[47] For example:

     o   The Ministry of Education has issued a document on the implementation of ICT Responsibilities for 2016-2017 school year.[48]

+   Truong Hoa Binh, Deputy Prime Minister of Government and Head of the Steering Committee for Administrative Reform of the Government, has noted the importance of closely integrating the development of e-government with administrative reform, a key government plan.[49]

-    Different ministries are responsible for integrating e-government into their respective

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44 http://www.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=189713

45 http://tapchitaichinh.vn/nghien-cuu-trao-doi/cach-mang-cong-nghiep-40-co-hoi-va-thach-thuc-123927.html

46 http://vietlaw.quochoi.vn/Pages/vbpq-toan-van.aspx?ItemID=27995; http://www.chinhphu.vn/portal/page/portal/English/strategies/strategiesdetails?categoryId=30&articleId=10057712

47 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=509&mode=detail&document_id=181767

48 https://e-ict.gov.vn/laws/detail/Cong-van-so-4622-BGDDT-CNTT-ve-viec-huong-dan-thuc-hien-nhiem-vu-CNTT-nam-hoc-2016-2017-715/

49 https://baomoi.com/gan-ket-cai-cach-hanh-chinh-voi-xay-dung-chinh-phu-dien-tu-va-kiem-soat-thu-tuc-hanh-chinh/c/19977345.epi

areas of responsibility. A few ministries has launched their own e-government architecture framework, such as the Decision No. 5373/2017/QĐ-BNN-PTNT or Decision No. 3769/2017/QĐ-BHCN and so forth. However, it is unclear to what extent this is part of national long-term plans.

1.11 Is the digital strategy designed around the most pressing needs of people? YELLOW

+ Legal documents generally aim to ensure benefits to citizens.[50]

+ The government takes user-centered design into account, such as Decree No. 43/2011 / ND-CP, Article 5: Principles of providing information[51]:

o 1. The establishment of e-portals and online public services by state agencies shall be guided by user-centered principles.

o 2. User-centered principles are construed as follows:

• a) To search for papers and information that require the successful provision of a public service to a public agency when providing online public services, it must not be re-supplied when providing public services. the next time for this state agency and other state agencies.

• b) Implementing administrative procedures more quickly, minimizing the number of times users have to go to state agencies in a year;

• c) Ensure convenience for users. Electronic information gateways of ministries, ministerial-level agencies, agencies attached to the Government and People's Committees of provinces and centrally-run cities should aim to become an access point for users.

or Article 4: Principle of implementing one-stop shop mechanism, interlink one-stop shop mechanism of the Decree 61/2018/ND-CP, stating that "Taking the satisfactory of citizen and organizations as the measurement for the quality and efficiency of serving"

- The digital strategy focuses on providing supply-side information and services and does not take into account bridging digital divides to enhance e-inclusion.

- It is unclear how user feedback, if at all, is considered in service design.

1.12 Does the organizational and governance structure enable the co-ordination of design and delivery of people-centered services across government? YELLOW/ RED

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50 http://moj.gov.vn/qt/tintuc/Pages/nghien-cuu-trao-doi.aspx?ItemID=1536

51 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Nghi-dinh-43-2011-ND-CP-cung-cap-thong-tin-va-dich-vu-cong-truc-tuyen-125408.aspx

+ According to Decree No. 64/2007 / ND-CP on the application of information technology to the operation of state agencies, each ministry has an IT director, as does each province.[52] The function of IT directors is to advise leaders how to plan and organize implementation and work with other agencies.

+ The National Committee on IT Application has been restructured and transformed into the National Committee on E-Government (Decision No. 1072/QĐ-TTg dated 28 August, 2018). Provinces have their own steering committees.

+ Decree No. 43/2011/ND-CP dated June 13, 2011 of the Government on provision of online information and public services on websites, portals of state agencies, provides a basic framework.[53]

+ Currently, OoG oversees horizontal/cross-agency implementation.[54]

+ The Government issued Decree 61/2018/ND-CP which expresses the spirit of taking citizen and oganizations a the centre of service.

- There is a lack of standards when it comes to emerging technologies such as cloud computing (see section below).

- There is no central e-services portal (yet) and there is little standardization in terms of actual design of services.

- There are limited resources and poor implementation arrangements to ensure that the services will be delivered with quality and timeliness evenly across provinces and agencies.

1.13 Are there dedicated professional cadres and Technical leaders (CIO/CDO or alike) who oversee digital strategies and drive change across government? YELLOW/ RED

+ There is a National Commitee of e-Government (the Prime Minister is the Chairman). Many provinces/ministries has established steering board of e-government development at their agency.

+ There is a "CIO council" of IT Directors of state agencies.[55]

+ Currently, OoG oversees horizontal/cross-agency implementation.[56]

- Technically speaking, there is no government-wide CIO/CDO per se.

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52 http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=14492

53 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&_page=1&mode=detail&document_id=101050; http://hethongphapluatvietnam.net/decree-no-43-2011-nd-cp-of-june-13-2011-on-provision-of-online-information-and-public-services-on-websites-or-web-portals-ofstate-agencies.html

54 http://vpcp.chinhphu.vn/

55 http://cio.gov.vn

56 http://vpcp.chinhphu.vn/

- The "CIO council" does not directly set policy or drive change across government; members are only representing their own areas of responsibility.

1.14 Is there a cross-government platform to ensure citizen-centric design and use of common data and services? YELLOW/ RED

+ Decree No. 43/2011/ND-CP dated June 13, 2011 of the Government on provision of online information and public services on websites, portals of state agencies, provides a basic framework.[57]

+ Decree No. 61//2018/ND-CP on implementing one-stop shop mechanism, interlink one-stop shop mechanism in handling administrative procedures.

+ MIC has issued circulars to improve common design and standards as well as minimum standards for managing and monitoring websites. For example, every website must feature a citizen feedback mechanism.

- There is no government-wide platform per se but rather each agency is individually responsible for website design and services. The Scheme of National Public Service Portal (e-Services) is in the process of development and expectedly issued in the first quarter of 2019. The Scheme hopefully solve the issue partly.

- It is not clear how feedback is actually taken into account to improve citizen-centric design.

1.15 Does the government have the sustained funding to implement its digital strategy? Is there a dedicated budget line for digital government? YELLOW/ RED

+ According to Article 49, Law No. 29/2013/QH13 dated June 18, 2013 of the National Assembly on Science and Technology: "The State earmarks 2% or more of the total annual state budget expenditures for science and technology and gradually increase this rate to meet requirements of science and technology development".[58]

+ The government has allocated resources to implement digital government initiatives specifically. In Resolution No.73 / NQ-CP, Approving the investment policy of target programs from 2016 to 2020, the target program of information technology includes a total budget of 7,920 billion VND.[59]

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57 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&_page=1&mode=detail&document_id=101050; http://hethongphapluatvietnam.net/decree-no-43-2011-nd-cp-of-june-13-2011-on-provision-of-online-information-and-public-services-on-websites-or-web-portals-ofstate-agencies.html

58 http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=28730

59 https://thuvienphapluat.vn/van-ban/Tai-chinh-nha-nuoc/Nghi-quyet-73-NQ-CP-chu-truong-dau-tu-cac-Chuong-trinh-muc-tieu-2016-2020-320942.aspx

+   In addition, there is budget for the information security plan and other items related to e-government items up to 2020.[60]

-    Funding for e-government is limited.

-    Almost all agencies say a lack of funding is their greatest challenge towards digital government.

1.16 Is there a system and processes to monitor government's financial expenditures on digitization based on clear government-wide digital procurement policy? RED

+   Procedures for implementation of investment projects using state capital is in accordance with the current legal documents.[61]

+   There is an e-procurement portal.[62]

-    Current procurement policy is cited by third-party providers as a barrier to deliver better products and services given technical requirements, including limits on the amount that can be spent on design.

-    Most bids are not submitted via the e-procurement portal, making them harder to track.

-    The process for tracking expenditure specifically on digitization is unclear.

1.17 Is budget allocation to the digital government strategy tied to KPI and results, cross-agency collaboration, and maintenance and operations? YELLOW/ RED

+   MIC receives funding for maintenance and operations.

-    No evidence of budget being tied to either KPIs or cross-agency collaboration.

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60 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-63-QD-TTg-phe-duyet-Quy-hoach-phat-trien-an-toan-thong-tin-so-quoc-gia-den-nam-2020-100235.aspx;   http://egov.chinhphu.vn/bao-mat-va-an-toan-thong-tin-trong-trien-khai-chinh-phu-dien-tu-a-NewsDetails-37510-14-186.html

61 http://www.aita.gov.vn/CMSPages/BaiViet/Default.aspx?IDBaiViet=61

62 http://muasamcong.mpi.gov.vn/

Assessment of Leadership and Governance

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
1.1. Does the Government have a shared vision for digital transformation? A digital strategy linked to the national development agenda?	**YELLOW/ GREEN**	Industry 4.0 is a well-known concept in Vietnam due to its potential challenges (and opportunities) for the country. In this context, top government officials have a shared vision for digital transformation and it is being linked to the national development agenda.
1.2. Is there a digital government act/law?	**YELLOW**	Resolution 36A is the main digital government act as it identifies roles & responsibilities amongst different state agencies. The draft Resolution of e-Government is in the phase of collecting comments. There has not any plan of making a Law on digital government
1.3. Do top Government leaders (e.g., Ministers, Under-Secretaries, Departments Heads, etc.) understand, own and support the digital government vision? Are non-Government stakeholders included and consulted in the digital government strategy and implementation?	**YELLOW/GREEN**	Top government leaders understand, own, and support digital government as outlined in Resolution 36A, amongst other regulations. In addition, OoG is tasked with cross-agency support and monitoring to support the digital government vision. However, there has not been a detailed roadmap to implement this strategy and the Resolution 36A does not define clearly role of non-government stakeholders in this strategy. The expected upcoming e-Government Resolution might be a solution for this issue.
1.4. Is the government's vision/digital strategy communicated internally? And externally?	**YELLOW**	The government, and more specifically Prime Minister Nguyen Xuan Phuc, have been very vocal in externally communicating the government's digital vision as it relates to Industry 4.0. Digital government is seen as a subset of Industry 4.0 and also as part of public administrative reform (PAR). This is also communicated internally, in part through regulations.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
1.5. Does the government run digital government innovation competitions or awards?	**YELLOW**/**RED**	There is a lot of innovation in Vietnam, including in the wider ICT eco-system (see next chapter). When it comes to competitions or awards as it relates to digital government specifically, however, there is very little progress. E-government is seen as a subset of greater innovation and not a focus of such promotional activities. One exception is the MIC annual report on the state of ICT application, which is a commendable effort to raise the profile of digital government development in the country.
1.6. Does the vision set specific goals for citizens, businesses, employees and other stakeholders?	**RED**	There have been specific objectives in providing online public services. Yet, objectives relating the improving social life are not clear. There are only few targets from demand-side, such as aiming to have a certain percentage of the population file-online taxes, a common measure of digital government success in advanced countries.
1.7. Are there key performance indicators for measuring implementation of strategy?	**YELLOW**/**RED**	Implementation measurement in terms of KPIs are limited to supply-side assessments of available services and how advanced they are. Again, there are few, if any, demand-side targets.
1.8. Is there a clear implementation road map?	**YELLOW**/**RED**	There is a clear road map and it stretches horizontally across agencies and vertically to provinces. The basic roadmap is frequently supplemented through new regulations, although performance targets can be unclear.
1.9. Does the digital strategy have clear and quantifiable goals aligned with national priorities? Are these aligned with SDGs?	**YELLOW**/**RED**	There is a clear digital strategy and there are clear national priorities, including goals aligned with the SDGs. However, the intersection of digital government and the SDGs is less evident. In comparison many advanced countries make the link of how digital government can directly support the SDG targets.
1.10. Is the digital strategy integrated into other national policies and plans as well as sector strategies?	**YELLOW**/**RED**	Digital strategy permeates all sectors as Resolution 36A clearly defines roles & responsibilities across different areas for which ministries in turn have accountability. Digital strategy is also part of PAR. However, it is less clear if digital government is considered in additional national policies (such as the SDGs, see above). The draft e-Government Resolution has included this content.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
1.11. Is the digital strategy designed around the most pressing needs of people?	YELLOW	There are several regulations, such as Decree 43, which provides general principles in implementing online public services, that include an emphasis on user-centered design. At the same time, there are no obvious instances in which user feedback has been taken into account when designing (or re-designing) services.
1.12. Does the organizational and governance structure enable the co-ordination of design and delivery of people-centered services across government?	YELLOW/RED	There is a National Committee on e-Government, which includes ministerial leaders. However, there is no a position titled CIO as successful experience of many other countries. The e-Services Portal has not been set up.
1.13. Are there dedicated professional cadres and Technical leaders (CIO/CDO or alike) who oversee digital strategies and drive change across government?	YELLOW/RED	There is a National Committee on e-Government. At each ministry and province, there is a steering committee for ministerial/provincial e-government development. There is a "CIO council" which is comprised of IT directors at different agencies; similarly, there are provincial councils of IT departments. It is unclear, however, how such meetings translate into coordinated design and delivery of services, especially as there is a lack of common standards and platforms.
1.14. Is there a cross-government platform to ensure citizen-centric design and use of common data and services?	RED	A basic framework for online public services is provided and supplemented by Circulars from MIC to enhance common design; however, there is no cross-government platform in use, which is a key advantage in implementation in advanced countries (such as the UK).
1.15. Does the government have the sustained funding to implement its digital strategy? Is there a dedicated budget line for digital government?	YELLOW/RED	There is a dedicated budget to e-government and associated areas but it is limited compared to leading countries.
1.16. Is there a system and processes to monitor government's financial expenditures on digitization based on clear government-wide digital procurement policy?	RED	There is an e-procurement system, although it is not used in the majority of bids and hence the process of electronic monitoring is limited. Further, it is unclear if spending on digital government is tracked specifically.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
1.17. Is budget allocation to the digital government strategy tied to KPI and results, cross-agency collaboration, and maintenance and operations?	**YELLOW/RED**	MIC, as the lead agency for e-government implementation, receives a dedicated budget for maintenance and operations. There is no indication that any digital government budget is tied to KPIs or cross-agency collaborations, indicating a red flag when it comes to performance in implementing initiatives.
OVERALL	**YELLOW**	There is strong leadership and governance (often in the form of regulations) at the top level. The extent of implementation and detailedness surrounding specific areas are not yet clear.

2. User Focus

Context: *This section examines the consultation and participation of users in the design of services. Stakeholders involve both supply-side agencies (public administration and modernisation) and the demand-side (population and businesses). The Human-centered design methodology is an example of such a participatory approach for public service re-design. To ensure inclusive representation of all users, present and potential interviewees in this section include NGOs and social intermediaries.*

2.1 Are users invited by government agencies to participate in design, test and use of new eServices? Are there policies in place to promote user-centered design of public eServices? YELLOW/RED

+ Every agency website is mandated to have a feedback mechanism.

+ In addition, the government has a dedicated a website for receiving general suggestions, although it is not specific to e-government.[63]

+ Similarly, there is a website for general suggestions from enterprises, again not specific to e-government.[64]

- There are no policies to invite users to participate in the design and test of e-services before implementation.

- It is unclear how feedback is evaluated and taken into account, if at all.

2.2 Do the eservice design focus on users' needs, convenience and uptake? Do users have access to personalized services? YELLOW

+ The government takes user-centered design into account, such as Circular No. 32/2017/TT-BTTT, Article 4: General principles when building e-portals and online public services:[65]

  o 1. The establishment of e-portals and online public services by state agencies shall be guided by user-centered principles.

  o 2. User-centered principles are construed as follows:

    • a) To search for papers and information that require the successful provision of a public service to a public agency when providing online public services,

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63 https://nguoidan.chinhphu.vn/

64 http://doanhnghiep.chinhphu.vn/

65 https://mic.gov.vn/Upload/VanBan/TT-32.signed.pdf

> it must not be re-supplied when providing public services the next time for this state agency and other state agencies;

- • b) Implementing administrative procedures more quickly, minimizing the number of times users have to go to state agencies in a year;

- • c) Ensure convenience for users. Electronic information gateways of ministries, ministerial-level agencies, agencies attached to the Government and People's Committees of provinces and centrally-run cities should aim to become an access point for users. The solution to improve the quality of online public services in government agencies includes personalizing the display of information to enhance the customer experience.

+ A few agencies offer login features (and hence a degree of personalization), including:

o E-transaction for Social Insurance, Medical Insurance and Unemployment Insurance.[66]

o National Single Window for customs.[67]

o National Business Registration Portal.[68]

- Uptake and usage is not widely considered.

- There is no single sign-on.

- Personalization features remain underdeveloped.

2.3   Can users access services through single online portal / gateway? Mobile devices? YELLOW/RED

+ There is a central government portal; however, it is not a "single" portal in a traditional sense.[69]

+ There is a plan to launch a national government e-services portal in 2018.

+ Decree No. 43/2011 / ND-CP on General principles when building e-portals and online public services states that web portals should support access from mobile devices.[70]

+ MIC is evaluating the possibility of using electronic signature on mobile devices.

+ In addition, according to Circular No. 32/2017 / TT-BTTTT regulating the provision of online public services and ensuring convenient access to the website or portal of the state, online public services are available to consumers on mobile devices.[71]

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66 https://gddt.baohiemxahoi.gov.vn/#/

67 https://vnsw.gov.vn

68 https://dangkykinhdoanh.gov.vn/

69 http://chinhphu.vn; http://chinhphu.vn/portal/page/portal/English

70 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Nghi-dinh-43-2011-ND-CP-cung-cap-thong-tin-va-dich-vu-cong-truc-tuyen-125408.aspx

71 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Thong-tu-32-2017-TT-BTTTT-cung-cap-bao-dam-kha-nang-truy-cap-thuan-tien-trang-thong-tin-dien-tu-341078.aspx

+ Some agencies and provinces also have mobile apps, for instance HCMC.[72]

- A majority of online public services are being implemented independently and are unconnected.

- Plans are in place (such as the development of a national e-services portal) but actual implementation remains to be verified.

2.4 Is there an integrated multi-channel approach (including related marketing and training) to deliver and promote digital services (face to face, Internet, mobile)? YELLOW

+ The government has a policy to handle administrative procedures in three ways: face to face at one-stop-shops, e-government (including m-government), and via postal services.

+ Decree No.61/2018 on one-stop shop, inter-link one-stop shop mechanism in handling administrative procedures.[73]

+ Decision No. 45/2016/QD-TTg dated October 19, 2016 of the Prime Minister on receipt of applications and release of administrative results via public postal services.[74]

+ According to Circular No. 32/2017 / TT-BTTTT regulating the provision of online public services and ensuring convenient access to the website or portal of the state, online public services are available to consumers on mobile devices.[75]

+ Several provinces provide SMS mobile service such as Da Nang.[76]

+ There is an official Government Facebook page.[77] The Ministry of Health also operates a Facebook page.[78]

+ Individual agencies have additional channels for interaction. VNSS, for example, has a call center and uses Skype chat.

- There is no integrated approach at the national level.

- There are no marketing and training programs specifically related to a multi-channel approach.

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72 https://dichvucong.hochiminhcity.gov.vn

73 http://vanban.chinhphu.vn

74 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=186863

75 https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Thong-tu-32-2017-TT-BTTTT-cung-cap-bao-dam-kha-nang-truy-cap-thuan-tien-trang-thong-tin-dien-tu-341078.aspx

76 https://tracuudvc.dongnai.gov.vn/

77 https://www.facebook.com/thongtinchinhphu/

78 https://www.facebook.com/botruongboyte.vn

2.5 Is there a marketing and training strategy to promote digital services' uptake across all available channels? YELLOW/RED

+   In April 2017, the Ministry of Education introduced the plan to renew its curriculums. The plan included digital literacy for primary school students and training for teachers in ICT skills.[79] Specifically, the plan calls for the introduction of ICT skills training in grade 3 and continuing through high school.[80] Teachers are required, by law, to undergo training so that they can meet the basic teaching requirement of the national curriculum.[81]

+   There are instances of cooperation with private sector entities to promote digital services. On May 26, 2017 Vietnam Farmer's Union cooperated with Google Corporation to organize a workshop on capacity building. Google will support the Vietnamese Farmers Association to provide essential digital skills training to more than 30,000 farmers in nine provinces over the next three years.[82]

+   In January 2016, Prime Minister Nguyen Tan Dung approved a program to develop broadband telecommunications infrastructure by 2020.[83] The plan calls for state support for projects to bring both affordable infrastructure and training to people in remote and rural areas, including islands.[84]

-    In practice, teachers have noted that the new education plan is complicated and ambiguous.[85]

-    There is no formal government marketing strategy to promote e-government usage.

-    Formal government training related to digital usage remains limited to education rather than being specific to using digital government.

2.6 Are digital services made accessible to all taking account of location, connectivity, gender, skills, affordability and disabilities? YELLOW

+   According to the Law on Information Technology No. 67/2006 / QH11, there are preferential policies for organizations and individuals engaged in activities of information technology application and development for agriculture; rural, remote area, border and island; ethnic minorities, disabled and disadvantaged people.[86]

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79   https://moet.gov.vn/tintuc/Pages/CT-GDPT-Tong-The.aspx?ItemID=4944

80   https://moet.gov.vn/tintuc/Pages/CT-GDPT-Tong-The.aspx?ItemID=4944

81   https://moet.gov.vn/tintuc/Pages/tin-tong-hop.aspx?ItemID=4105

82   http://www.baochinhphu.vn/Khoa-hoc-Cong-nghe/Google-cam-ket-ho-tro-dao-tao-ky-thuat-so-cho-30000-nong-dan-Viet-Nam/307100.vgp

83   http://vietnamnews.vn/economy/281600/broadband-strategy-approved.html#hzsm7EhLft2PAwE1.99

84   http://m.thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-149-QD-TTg-phat-trien-ha-tang-vien-thong-bang-rong-2020-2016-301186.aspx

85   http://english.vietnamnet.vn/fms/education/178674/vietnam-s-education-has-changed--but-progress-remains-slow.html

86   http://moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=15084

+   Decision No. 11/2014/QD-TTg dated January 27, 2014 of the Prime Minister approving the organizational and operational structure of the Vietnam Public Telecommunication Fund to support people to access ICT services at a reasonable price.[87]

+   According to Decision No. 119/QĐ-TTg on The approval for the Development Plans of Information and Communication for Rural Area 2011-2020, there are plans for increasing the e-inclusion of rural areas by 2020.[88]

+   In January 2016, Prime Minister Nguyen Tan Dung approved a program to develop broadband telecommunications infrastructure by 2020.[89] The strategy calls for developing plans that increase e-inclusion for the disabled and low-income people. The plan also aims to increase Internet accessibility for people with disabilities can access the broadband network in the county.[90]

+   The government has a national target program of providing information at local levels.[91]

+   MIC encourages W3C 2.0 web accessibility standards.

-   Neither the Ministry of Labor, War Invalids, and Social Affairs, nor the Committee for Ethnic Minority Affairs, have information about any other initiatives to increase e-inclusion.[92]

-   Plan of equal access is there but actual accessibility in remote areas and people with disabilities is poor.

-   There is no government-wide implementation plan and M&E framework in place to track the progress of e-inclusion.

2.7 Are digital services compliant with appropriate web accessibility standards (eg WAI, WCAG)? YELLOW/GREEN

+   Circular No. 26/2009 / TT-BTTTT Regulations on providing information and ensuring convenient access for websites of state agencies.[93]

+   Circular No. 28/2009 / TT-BTTTT regulating the application of standards and technologies to assist people with disabilities in accessing and using information and communication technologies.[94]

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87 https://mic.gov.vn/Pages/VanBan/10104/11_2014_Qd-TTg.html

88 https://mic.gov.vn/Upload/Store//VanBan/1943/QD119TTG.PDF

89 http://vietnamnews.vn/economy/281600/broadband-strategy-approved.html#hzsm7EhLft2PAwE1.99

90 http://m.thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-149-QD-TTg-phat-trien-ha-tang-vien-thong-bang-rong-2020-2016-301186.aspx

91 http://www.chinhphu.vn/portal/page/portal/chinhphu/noidungchuongtrinhmuctieuquocgia?_piref135_18249_135_18248_18248.strutsAction=ViewDetailAction.do&_piref135_18249_135_18248_18248.docid=1414&_piref135_18249_135_18248_18248.substract=

92 http://www.molisa.gov.vn/vi/Pages/Trangchu.aspx; http://www.cema.gov.vn/

93 http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=11695

94 https://mic.gov.vn/Pages/VanBan/9829/28_2009_TT-BTTTT.html

+   Adherence to accessibility standards is encouraged to follow international technical guidelines for Web Content Accessibility, including for mobile devices.[95]

-    Actual implementation of web accessibility standards is not monitored.

2.8   Is there a process to integrate users feedback for improving online user-interface and service delivery? RED

+   Decision No. 574/QD-TTg dated April 25, 2017 of the Prime Minister, promulgating the regulation on receiving, handling and responding to feedbacks and recommendations of citizens and enterprises on the Government's portal.[96]

+   There have been surveys to measure satisfaction of e-Government services in provinces and cities, such as: Da Nang, Binh Duong, Dong Nai.[97]

+   The government portal publishes statistics on usage from several ministries and provinces.[98]

-    There is no formal process to integrate user feedback in improving service design or delivery.

2.9   Is civil society regularly engaged in a consultative process on policy design, implementation and performance? YELLOW/ RED

+   The law of access to information is partially designed to increase transparency in order for civil society to become more engaged in process, in particular monitoring performance.

-    Besides the opportunities outlined above there are no particular incentives for civil society to engage in a consultative process on policy design, implementation and performance.

-    There is no formal process to integrate user feedback in improving service design or delivery, including from civil society.

-    It is unclear how (and if) the law of access to information may improve the consultative process as it is not yet in effect.

95   https://vanbanphapluat.co/thong-tu-cung-cap-dich-vu-cong-truc-tuyen-bao-dam-kha-nang-truy-cap-thuan-tien-trang-thong-tin-dien-tu-2017

96   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&_page=1&mode=detail&document_id=189562

97   http://egov.danang.gov.vn/web/101802/5;http://dichvucong.binhduong.gov.vn/dvc/Default.aspx?tabid=1129&thang=8; https://tracuudvc.dongnai.gov.vn/web/dgshl/danh-gia-su-hai-long

98   http://www.chinhphu.vn/portal/page/portal/chinhphu/congdan/congkhaitiendogiaiquyethosocuabonganhdia-phuong

Assessment of User Focus

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
2.1. Are users invited by government agencies to participate in design, test and use of new eServices? Are there policies in place to promote user-centered design of public eServices?	**YELLOW/RED**	The government provides opportunities for feedback, including on every agency website. They do not, however, relate specifically to e-service design and when such comments are provided, it is unclear if (at all) they are taken into account.
2.2. Do the eservice design focus on users' needs, convenience and uptake? Do users have access to personalized services?	**RED**	Regulations stipulate that e-services should be user-centric, although in practice it is unclear whether they are as there is little (if any) evaluation of demand-side perceptions.

Personalized services are at their infancy with a simple login, rather than advanced features as found in advanced countries. |
2.3. Can users access services through single online portal / gateway? Mobile devices?	**YELLOW/RED**	There is a single portal but not in a traditional sense; an e-services portal is scheduled to be implemented in 2018. Mobile access is a focus area for online public services as Vietnam has a high rate of mobile phone penetration.
2.4. Is there an integrated multi-channel approach (including related marketing and training) to deliver and promote digital services (face to face, Internet, mobile)?	**YELLOW**	There are clear regulations that face-to-face, e-government (and m-government), as well as postal services are acceptable means of communication and service delivery; however, there does not appear to be an integrated strategy in place, such as found in advanced countries like Denmark and the UK that promote a digital first strategy supplemented with offline options.
2.5. Is there a marketing and training strategy to promote digital services' uptake across all available channels?	**YELLOW/RED**	The recent education plan calls for enhancing ICT skills among students and teachers alike, which in turn can be beneficial towards e-government adoption. There are also ad hoc training programs but not driven by a national government strategy per se.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
2.6. Are digital services made accessible to all taking account of location, connectivity, gender, skills, affordability and disabilities?	YELLOW	There are clear efforts to improve e-inclusion, including enhancing speed (broadband), improving affordability, reaching rural populations, and making websites accessible to those with disabilities.
2.7. Are digital services compliant with appropriate web accessibility standards (eg WAI, WCAG)?	YELLOW/GREEN	MIC has issued directions for websites to be compliant with WCAG 2.0, which is the leading international standard for web accessibility.
2.8. Is there a process to integrate users feedback for improving online user-interface and services delivery?	RED	There is a clear process for collecting user feedback and this is being carried out in practice; however, it is less clear to what extent (if at all) such comments are being used to improve the online user interface.
2.9. Is civil society regularly engaged in a consultative process on policy design, implementation and performance?	YELLOW/RED	The law of access to information will go into effect in July 2018 and may enable civil society greater access to the consultative process; in the meantime, there is no evidence that it is involved in policy design, implementation and performance.
OVERALL	YELLOW	There is an emphasis on collecting user feedback via agency websites, which is along international best practice; however, it is unclear how that feedback is used in terms of improving services. Similarly, there is a focus on mobile connectivity and e-inclusion, but there are no measures of progress in practice.

3. Business Process Change

Context: Business process change is often the most neglected aspect of digital transformation and can make or break the success of digital government transformation. Key stakeholders are agencies in charge of reform and civil service modernisation.

3.1 Is legacy legislation and regulations in all sectors (ie in the non-digital sphere) amended to enable for digital transactions? YELLOW/RED

+ Regulations are continuously updated to enable digital transactions.

+ Decision No. 2545/QĐ-TTg dated 30 December 2016 approving the scheme on development of non-cash payment in Vietnam during 2016-2020, which set forth the goal of cash payment over total transactions of less than 10 percent by 2020.

+ Digital transactions (level 4) are possible across sectors; however, they remain an exception in practice.

+ Digital signatures are accepted in a few services, for instance to pay tax.[99]

+ The government has actively promoted online tax refunds.[100]

+ There is also digital education and training for government officers on e-commerce.[101]

- Paper-based documents remain the most common form of transaction across sectors.

- Anecdotally, there is sometimes a lack of trust in digital transactions. For instance, according to the HCMC Department of Information and Communications, some districts provide level 4 building permits but due to the fact that some papers have been scanned, people are asked to also provide originals for inspection.[102]

3.2 Are there standard procedures to re-design business processes for simplification, digitization of services and optimization (e.g., ISO 9000 certification, use of feedback mechanisms, etc.)? YELLOW/RED

+ On 21 April 2015 Document No. 1178 / BTTTT-THH promulgation of Vietnam

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99 http://ca.gov.vn/cert/viewpage.htm?id=4; http://nhantokhai.gdt.gov.vn/ihtkk_nnt/home_public.jsp

100 http://vietnamnews.vn/economy/348708/tax-authority-promotes-national-online-tax-refund.html#Cm031j9YUa4Mbv7P.97

101 http://www.vecita.gov.vn/TinBai/1481/Tap-huan-thuong-mai-dien-tu-cho-can-bo-quan-ly-nha-nuoc-va-doanh-nghiep-tai-Ha-Giang-Tuyen-Quang-va-Bac-Kan; http://www.vecita.gov.vn/TinBai/1510/Tap-huan-thuong-mai-dien-tu-cho-can-bo-quan-ly-nha-nuoc-doanh-nghiep-va-sinh-vien-tai-Phu-Tho

102 https://baomoi.com/lam-thu-tuc-tren-mang-van-phai-nop-ho-so-giay/c/24102077.epi

e-Government Architecture Framework outlines a framework for shared, integrated platforms (NGSP, LGSP).

\+ Some agencies, such as SBV, have issued standards such as ISO 27001.

\- There does not appear to be any central standard procedures to re-design business process for e-government generally.

\- Feedback mechanisms appear ad hoc rather than following ISO certification.

3.3 Is referential data (e.g., Business registry, Personal ID, Land, Taxpayers registry, etc.) consistently shared electronically across agencies? RED

\+ Decision No. 714/QD-TTg on 22 May 2015 establishes a list of priority national databases to be developed.[103] They are:

    o   National population database;

    o   National land database;

    o   National business registration database;

    o   National demographic statistics database;

    o   National financial database; and,

    o   National insurance database.

\- Given that databases are under development, they cannot be consistently shared at this moment.

\- Several agencies pointed to lack of information-sharing regarding existing data.

\- Data integration and sharing among line ministries and localities face many difficulties and limitations. Many localities have not yet actively developed and exploited databases.

3.4 Is the government - at various levels - investing in change management practices (training, skills, culture, knowledge, HR, etc.) towards digital transformation? Is there a change management office in charge of the implementation within government? YELLOW/ RED

\+ MIC has issued two documents, one on training for IT directors and one on IT capacity building. In addition, provinces have their own training programs.

    o   For example, following Resolution 36A, the People Committee of Hanoi issued Decision No. 5113/QĐ-UBND on 7th Oct 2014 on starting ICT training for the leadership in charge of information technology.[104]

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103   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Decision-714-QD-TTg-databases-requiring-priority-development-to-establish-e-government-development-320788.aspx

104   http://ict-hanoi.gov.vn/ctmtqg/-/view_content/702102-boi-duong-lanh-dao-phu-trach-cong-nghe-thong-tin.html

+ Training is largely outsourced.

- There is no change management office per se.

- Training is more general in nature and does not focus on change management specifically.

3.5 Has government leadership (Middle and Top) the ability to set new priorities and implement new process or new roles to increase the adoption and use of digital tools amongst Public Servants? YELLOW

+ Top government leadership has the ability to set new priorities to increase adoption and use of digital tools amongst public servants.

+ Implementation of priorities largely rests with top management of individual agencies.

- The role of middle management in setting new priorities is unclear.

- Performance and monitoring of implementation remains weak.

Assessment of Business Process Change

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
3.1. Is legacy legislation and regulations in all sectors (i.e. in the non-digital sphere) amended to enable for digital transactions?	YELLOW/ RED	Regulations enable digital transactions across sectors, and there are efforts to encourage usage, such as tax payments. Despite a push towards level 4 service delivery (that includes online payment), most government transactions within the government systems and between government with public remain paper-based, however. This is also particularly evident in the area of e-commerce, which is growing rapidly in Vietnam but to date relies largely on cash on delivery (COD).
3.2. Are there standard procedures to re-design business processes for simplification, digitization of services and optimization (e.g., ISO 9000 certification, use of feedback mechanisms, etc.)?	YELLOW/ RED	There are standards for re-designing business processes; however, responsibilities for implementation rests with individual agencies, and it is particularly unclear to the extent to which they apply to feedback mechanisms.
3.3. Is referential data (e.g., Business registry, Personal ID, Land, Taxpayers registry, etc.) consistently shared electronically across agencies?	RED	Sharing of data across agencies is a general challenge in Vietnam. In regard to referential data, there are six national databases under development and in different phases of implementation; hence it is too early to assess whether this data will be shared consistently. The practice showed that the data sharing among agencies is lack of consistency. It is not clear whether this fact can be improved in future.
3.4. Is the government - at various levels - investing in change management practices (training, skills, culture, knowledge, HR, etc.) towards digital transformation? Is there a change management office in charge of the implementation within government?	YELLOW/ RED	There is training at various levels, but it is not clear to the extent (if at all) that it includes change management specifically towards digital transformation. There is also no change management office in charge of implementation.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
3.5. Has government leadership (Middle and Top) the ability to set new priorities and implement new process or new roles to increase the adoption and use of digital tools amongst Public Servants?	YELLOW	Top government leadership has the ability to set new priorities, based on regulations. Adoption of digital tools is already high but also top management has the ability to promote them further. Actual implementation, however, is less clear as there is a lack of performance monitoring (aside from tracking the number of staff that use computers (100%) as indicated in the next section).
OVERALL	YELLOW/ RED	There are positive signs in regard to overall business process change as there are standards, responsibilities, and emerging referential data in the form of national databases. At the same time, there remains a need for specific change management training as part of digital transformation, greater progress in regard to the development of national databases, and further stimulation of digital transactions.

4. Capabilities, Culture and Skills

Context: There is a need to distinguish between two different types of profiles and skills for civil servants - the ICT organisations and their contractors, and the business line managers. Key indicators include certification/accreditation. Type of training required ranges from project management, database management, data entry, customer support, etc.

4.1 Does the government have enough skilled, qualified staff to deliver on the digital government transformation strategy? How many? YELLOW/ RED

+ 100% of people in central government organizations routinely use computers.[105]

+ 91% of people in central government organizations routinely use the Internet.[106]

- Staff skills to implement digital government transformation is frequently cited as the second-greatest challenge (after lack of funding).

- Although there are highly qualified people to deliver digital government transformation strategy, the main challenges are to recruit them to government positions in the first place as private sector salaries are much higher, and to retain people in the second instance. Many government recruits leave for the private sector after they have gained experience.

4.2 Does the government have staff / consultants with both business and technical knowledge and capabilities? YELLOW/ RED

+ There are 290 colleges and universities in Vietnam, many of whom provide excellent training in the cross section of public administration and ICTs. For example:

    o NAPA provides training on public administration specifically and includes e-government in certain curriculums.

    o FTP University brings industry education to academia to mix business and technical knowledge.

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105 http://mic.gov.vn/solieubaocao/Pages/TinTuc/134370/Bao-cao-danh-gia-muc-do-ungdung-cong-nghe-thong-tin-cua-cac-Bo--co-quan-ngang-Bo--co-quan-thuoc-Chinh-phu-va-cactinh--thanh-pho-truc-thuoc-Trung-uong-nam-2016.html

106 http://mic.gov.vn/solieubaocao/Pages/TinTuc/134370/Bao-cao-danh-gia-muc-do-ungdung-cong-nghe-thong-tin-cua-cac-Bo--co-quan-ngang-Bo--co-quan-thuoc-Chinh-phu-va-cactinh--thanh-pho-truc-thuoc-Trung-uong-nam-2016.html

+   Some agencies outsource tasks to private sector entities, such as Viettel, who possess the necessary skills and capabilities.

-    Staff skills to implement digital government transformation is frequently cited as the second-greatest challenge (after lack of funding) as talented individuals go to work in the private sector.

-    There is a lack of people in government who possess both business and technical knowledge.

-    There is limited funding to engage consultants who possess these skills.

4.3   Is there targeted internal digital education and training at all levels of government (central and local included)? YELLOW

+   Decision No. 698/QD-TTg dated June 01, 2009 of the Prime Minister approving the overall plan on development of information technology human resources up to 2015 and orientation toward 2020.[107]

+   Decision No. 481/QD-BNV dated May 30, 2012 of Ministry of Home Affairs, issuing training materials on information technology for civil servants to improve IT knowledge, skills.[108] Training courses have also been organized by MoHA.

+   Circular No. 03/2014/TT-BTTTT dated March 11, 2014 of Ministry of Information and Communications, promulgating skill standards of using information technology.[109]

+   There is digital education and training for government officers on e-commerce.[110]

+   There is also ad hoc training provided in collaboration with outside parties. For example, in June 2017, the Ministry of Justice worked with the National Legislative Development Project in Vietnam (NLD) sponsored by the Government of Canada to hold courses to update knowledge, skills and leadership methods in the context of Industry 4.0.[111]

+   Individual agencies also provide their own ad hoc training. SBV, for example, conduct their own training courses on cyber security annually targeting both leaders and technical staff.

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107   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=87768

108   https://moha.gov.vn/tin-tuc-su-kien/tin-hoat-dong-cua-bo-noi-vu/ket-thuc-lop-boi-duong-tructuyen-e-learning-36143.html;   https://moha.gov.vn/tin-tuc-su-kien/tin-hoat-dong-cua-bo-noi-vu/le-khai-mac-lop-boi-duong-tructuyen-e-learning-kien-11152.html

109   http://mic.gov.vn/phapdien/Pages/TinTuc/102033/Thong-tu-03-2014-TT-BTTTT.html

110   http://www.vecita.gov.vn/TinBai/1481/Tap-huan-thuong-mai-dien-tu-cho-can-bo-quan-ly-nha-nuoc-va-doanh-nghiep-tai-Ha-Giang-Tuyen-Quang-va-Bac-Kan;   http://www.vecita.gov.vn/TinBai/1510/Tap-huan-thuong-mai-dien-tu-cho-can-bo-quan-ly-nha-nuoc-doanh-nghiep-va-sinh-vien-tai-Phu-Tho

111   http://www.nldvietnam.org/news/view/146-l%E1%BB%9Bp-b%E1%BB%93i-du%E1%BB%A1ng-c%E1%BA%ADp-nh%E1%BA%ADt-ki%E1%BA%BFn-th%E1%BB%A9c-k%E1%BB%B9-nang-phuong-phap-lanh-d%E1%BA%A1o-cho-ngu%E1%BB%9Di-d%E1%BB%A9ng-d%E1%BA%A7u-don-v%E1%BB%8B-thu%E1%BB%99c-b%E1%BB%99.htm

-    The quality of training is unclear, particularly at local levels.

4.4   Are there clear, structured career paths and incentives for civil servants to pursue digital government functions? RED

+   There are structured career paths in a traditional sense but not specific to digital government.

-    There are no particular monetary incentives or other types of benefits for civil servants to pursue digital government functions specifically.

-    Digital government functions are largely viewed as traditional IT skills and there is a lack of career options for those who possess a blend of public administration and ICT expertise. Besides, e-government staff often settled in the units that performing general management functions and tasks, which are considered less related to the major domain of ministries and localities, therefore unlikely to get promotion.

4.5   Are staff working on digital strategies benefiting from extra incentives for pay and retention compared to other public servants? Are these incentives supported by decree or government act? RED

+   At least one agency (MoNRE) offers flexible working hours for IT staff, which is not provided to administrative staff.

-    MoNRE seems to be an exception as other agencies do not appear to offer any special incentives.

-    Staff retention remains difficult due to the high demand for ICT skills in the private sector.[112]

-    Decree No. 64/2007/NĐ-CP dated 10 April, 2007 by the Government on IT application in public agencies stipulated in Article 23.3 that "Public agencies are encouraged to adopt specific incentives in regards to remuneration for IT staff; regulations on criteria, responsibilities, benefits and requirements to evaluate performance of public officials in terms of IT application". However, it is rarely translated into practice by ministries and localities.

4.6   Are digital skills being embedded throughout the government? YELLOW

+   All government workers routinely use computers, and almost all the Internet.

+   Some digital skills are part of recruitment exams.

+   Decree No. 64/2007 / ND-CP on the application of information technology to the operation of state agencies.[113]

+   Decree No. 101/2017 / ND-CP on Training of State Officials to provide knowledge, skills

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112   https://tuoitre.vn/ky-1-tang-truong-nong-luong-it-tang-vot-1318881.htm
113   http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=14492

and methods for performing tasks in official duty and to contribute to the building of a contingent of professional officials.[114]

+ Every agency and province has an IT department.

- Staff skills to implement digital government transformation is frequently cited as the second-greatest challenge (after lack of funding) as talented individuals go to work in the private sector.

- Digital skills are largely viewed as traditional IT skills rather than a blend of public administration and ICT skills.

4.7 Is there a Digital Government Center of Excellence or Academy? YELLOW/RED

+ On 16 May 2016, RMIT University announced the creation of the Center of Digital Excellence (CODE). The initiative was launched with support from MoE and is a collaborative between RMIT, the Government, enterprises and universities and colleges in Vietnam.[115]

- CODE focuses primarily on education and research on digital excellence rather than specifically targeting e-government per se. It is also limited in scope.

- There does not appear to be any national Digital Government Center(s) of Excellence or Academy other than smaller disparate initiatives.

4.8 Does government have an asset management system for all its ICT toolkits and solutions? YELLOW/RED

+ MIC provides and stores ICT toolkits and solutions in general terms.

+ MIC is also building a data inventory.

- There does not appear to be a government-wide asset management system for all ICT toolkits and solutions.

- Data-sharing, including for toolkits and solutions, is limited.

- There is no government-wide cloud solution.

4.9 Is there active, technology supported, knowledge sharing and mobile working? RED

+ There is knowledge-sharing in a traditional sense (training courses, etc).

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114 https://m.thuvienphapluat.vn/van-ban/bo-may-hanh-chinh/nghi-dinh-101-2017-nd-cp-dao-tao-boi-duong-can-bo-cong-chuc-vien-chuc-319214.aspx

115 http://www.hochiminhcity.gov.vn/thongtinthanhpho/tintuc/Lists/Posts/Post.aspx?CategoryId=37&ItemID=54668&PublishedDate=2016-05-17T10:50:00Z

-    There does not appear to be any central technology-supported platform for knowledge sharing across agencies.

-    Information-sharing between agencies is limited to mandatory regulations.

-    There is no evidence of mobile working and no formal policy.

4.10 Is there high energy and high morale among civil servants working on digital strategy implementation? Can Government access new specialized talent from universities or industries for specific projects? YELLOW/ RED

+   There is high energy and high morale among civil servants working on digital government implementation as there are many opportunities to help improve public administrative reform.

-    The most common complaints at agencies are a lack of funding and a shortage of staff with appropriate skills.

-    Government has access to specialized talent in theory as Vietnamese universities and colleges produce people with such skills; however, in practice the most talented people go to work in the private sector.

Assessment of Capabilities, Culture and Skills

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
4.1. Does the government have enough skilled, qualified staff to deliver on the digital government transformation strategy? How many?	**YELLOW/RED**	Staff possessing the right qualifications are limited and cited as the second-greatest challenge towards digital government. The main problem is that talented individuals go to work in the private sector where salaries are higher. If they join government, they often leave after they have acquired experience (and go to the private sector). This is not a challenge specific to Vietnam but rather a problem facing government all over the world; however, more could be done to incentivize those with the right skills to consider working in the public sector (e.g. flexible working hours, mobile working, etc.).
4.2. Does the government have staff / consultants with both business and technical knowledge and capabilities?	**YELLOWRED**	In addition to the above, there is a particular challenge in finding people with a blend of business and technical skills. Digital government is often viewed as technical development necessitating traditional IT skills whereas increasingly there is a demand for people who can connect business processes and technology. Such expertise often resides outside of government but due to a lack of funding (the most commonly cited obstacle towards digital transformation) agencies are usually not in a position to take advantage of consultants.
4.3. Is there targeted internal digital education and training at all levels of government (central and local included)?	**YELLOW**	There are regulations regarding internal training and they extend to local levels. In practice, however, the nature and quality are unclear, leaving questions whether training should be monitored for performance.
4.4. Are there clear, structured career paths and incentives for civil servants to pursue digital government functions?	**RED**	There are no clear structured career paths and incentives to pursue digital government functions. One reason is that e-government is viewed as a technical area as opposed to promoting those who possess a blend of skills (see above).

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
4.5. Are staff working on digital strategies benefiting from extra incentives for pay and retention compared to other public servants? Are these incentives supported by decree or government act?	RED	There are no extra incentives for pay and retention compared to other civil servants. One agency offers flexible working hours but that appears to be an exception. The possibility of additional incentives for those working on digital government is particularly important given difficulties in attracting and retaining talent.
4.6. Are digital skills being embedded throughout the government?	YELLOW	Almost all staff routinely use computers and the Internet. Every agency has an IT department, which is good but at the same time has led to the conception that digital government is only a technical area of development, which it is not.
4.7. Is there a Digital Government Center of Excellence or Academy?	YELLOW/RED	There are some examples of establishing a Center of Excellence outside of government (in academia) but no large nation-wide initiative per se.
4.8. Does government have an asset management system for all its ICT toolkits and solutions?	YELLOW/RED	MIC is building a data inventory and houses ICT toolkits and solutions; however, there is no government-wide asset management system. One particular challenge is a general lack of information-sharing across agencies.
4.9. Is there active, technology supported, knowledge sharing and mobile working?	RED	There are no technology-supported knowledge sharing or remote working policies.
4.10. Is there high energy and high morale among civil servants working on digital strategy implementation? Can Government access new specialized talent from universities or industries for specific projects?	YELLOW/RED	Current energy and morale appear high; however, the most common complaints include a lack of funding and a shortage of staff with appropriate skills, both of which raise red flags as to whether morale will continue to be high.

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
OVERALL	**YELLOW/RED**	Capabilities and skills are both high in the country; however, a lack of qualified staff is frequently cited as the second-largest challenge (behind funding) among agencies, which raises concerns for morale and implementation of digital government in the future. Although it is unlikely the public sector can compete with the private sector in terms of remuneration, there are opportunities to create non-monetary incentives to increase hiring and retention rates of top talent.

5. Shared Infrastructure

Context: *Shared infrastructure in the form of digital platforms and services, standards and interoperability, and management information systems provides fundamental building blocks towards greater digital government efficiencies in terms of cost reductions and improvements in information-sharing.*

5.1 Does the Government have established Enterprise Architecture(s) for ICT related standards? YELLOW/GREEN

+ Circular No. 25/2014/TT-BTTTT dated December 31, 2014 of Ministry of Information and Communications, regulations on the implementation of information systems with the scale and scope from Central to local government.[116]

+ Official document No. 1178 /BTTTT-THH dated December 21, 2015 of Ministry of Information and Communications, promulgating the e-Government architecture framework in Vietnam, version 1.0, which includes the follow purposes:[117]

    o Identify the National E-Government Architecture Framework. This is the basis for state agencies at all levels to determine their responsibilities and position in the development of synchronized e-government.

    o To serve as a basis for ministries, agencies attached to the Government, provinces and centrally-run cities to build their e-Government architecture in detail, saving both time and resources, and at the same time ensure consistency, synchronization.

    o Based on Vietnam E-Government Architecture Framework and e-Government Architecture, details of state agencies and agencies can be developed and implemented. At all levels, to ensure the connection, communication, sharing, re-use of information and information infrastructure.

- There are policies and regulations in place; however, it is unclear how (and whether) they are implemented in practice across all agencies and levels of government.

5.2 Does the government have an e-Government Interoperability Framework with mandatory standards for each agency's systems? YELLOW

+ Circular No. 39/2017/TT-BTTTT dated 15 December 2017 of Ministry of Information

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116   https://mic.gov.vn/Pages/VanBan/10146/25-_2014_TT-BTTTT.html
117   http://mic.gov.vn/Pages/vanban/chitietvanban.aspx?IDVB=13778

and Communications, promulgating the list of technical standards on the application of information technology in State agencies (this circular is e-Government Interoperability Framework of Vietnam).[118]

+ Circular No. 10/2016/TT-BTTTT dated April 01, 2016 of the Ministry of Information and Communications, issuing "National technical regulation on the identifier structure and packet data format serving document management systems and operation".[119]

+ Circular No. 13/2017/TT-BTTTT dated June 23, 2017 of the Ministry of Information and Communications, promulgating technical requirements on connection of information systems and databases with the national databases.[120]

- In is unclear how (and whether) Circulars are implemented in practice across all agencies and levels of government.

5.3 Does the government have established standards for Application Programming Interfaces (APIs) to develop applications or online services? YELLOW/ RED

+ There are examples of disparate API initiatives. For example:

o Da Nang has built an open data system that enables APIs.[121]

o In 2018, SBV plans to issue a Circular on open APIs to share information with the fintech industry.

- There are no national government-wide standards regarding APIs.

5.4 Are shared digital platforms designed and used? RED

+ MIC plans to build a central data center, although funding for this effort appears unclear.

- Currently all ministries and provinces operate their own servers.

- There is no government-wide cloud solution.

5.5 Does the Government use Cloud services, e.g., to promote quicker and/ or more flexible delivery of services? Is the Government planning for Cloud migration? YELLOW/ RED

+ There are several strong private sector cloud providers in Vietnam, such as Viettel,[122]

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118   https://mic.gov.vn/Pages/VanBan/10100/22_2013_TT-BTTTT.html

119   https://mic.gov.vn/Pages/VanBan/13622/10_2016_TT-BTTTT.html

120   https://mic.gov.vn/Pages/VanBan/13969/13_2017_TT-BTTTT.html

121   http://opendata.danang.gov.vn/

122   https://viettelidc.com.vn/cac-mo-hinh-dich-vu-dien-toan-dam-may-tim-hieu-ve-iaas-infrastructure-as-a-services.html

FPT,[123] and VNPT.[124]

+ Some ministries have already adopted cloud solutions, such as:

     o   VNSS outsources their cloud data center to Viettel.

     o   SBV is considered a pioneer in using cloud services, although the agency has cited security concerns about moving sensitive information to the cloud.

     o   MoF is developing its own cloud to be ready after 2020.

     o   MoNRE has a cloud component in land system management.

+ MIC is aiming to issue cloud guidance to government agencies. Therefore, MIC should assume the prime responsibility and coordinate with concerned agencies in implementation; however, the development of cloud computing does not imply the construction of a cloud infrastructure for the entire government and provinces.

- There is no government-wide cloud solution.

- The biggest constraints towards cloud are not technical but rather legal.

- MIC does not know when cloud guidance documents will be available.

- In the meantime, agencies have chosen their own cloud model(s) at the expense of standardization.[125]

5.6   Are there established secure government network(s) for the sharing of services and data among agencies? Is local Government connected to Central Government network? YELLOW

+ 100% of central government organizations have a local area network.[126]

+ Decree No. 97/2008 / ND-CP on management, provision and use of Internet services and electronic information on the Internet.[127]

+ The government network is also used as an Intranet and connect to provinces and localities.

+ The government plans to put into operation the National Document Exchange Platform in the first quarter of 2019.

- The security aspects of the actual network(s) are unclear from a technical perspective.

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123   https://tech.fpt.com.vn/iaas-va-paas-lua-chon-nen-tang-nao-de-phat-trien-doanh-nghiep/

124   https://vnptdata.vn/cloud

125   http://aita.gov.vn/ung-dung-dien-toan-dam-may-hien-trang-ung-dung-trong-cac-co-quan-nha-nuoc;   http://mic. gov.vn/Pages/TinTuc/97725/Ung-dung-dien-toan-dam-may-trong-co-quan-nha-nuoc.html

126   http://mic.gov.vn/solieubaocao/Pages/TinTuc/134370/Bao-cao-danh-gia-muc-do-ungdung-cong-nghe-thong-tin-cua-cac-Bo--co-quan-ngang-Bo--co-quan-thuoc-Chinh-phu-va-cactinh--thanh-pho-truc-thuoc-Trung-uong-nam-2016.html

127   http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=24645

- It is unclear to what extent local governments connect to the central government network.

5.7 Are there management information systems? YELLOW

+ There are a number of management information system related to specific services, such as:

  o Driving license[128]

  o Social insurance[129]

  o Customs[130]

  o Online taxation[131]

  o Visa application[132]

  o Business registration[133]

  o E-procurement[134]

+ Additional information management systems may become available with the development of national databases.

- Adoption and implementation varies greatly across agencies and provinces.

- The quality of systems are unclear.

5.8 Does the Government consider private sector to provide digital services? Did the Government sign any Public-Private Partnerships (PPP) in sourcing? Is there a centralized asset management system to track all DD acquisitions (equipment, software licenses, version management, etc.)? YELLOW

+ The Prime Minister has issued Decision No. 80/2014 / QD-TTg dated December 30, 2014 regulating public-private partnerships in information technology services in state agencies. Subject to the Decision are state agencies and organizations using state capital to lease information technology services, enterprises, organizations and individuals participating in the provision of information technology services to state agencies.[135]

+ The MIC has issued Circular No. 21/2016/TT-BTTTT dated 30 September 2016,

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128 http://dichvucong.gplx.gov.vn:8000/faces/registration/home.xhtml

129 https://gddt.baohiemxahoi.gov.vn

130 https://vnsw.gov.vn; https://www.customs.gov.vn

131 http://kekhaithue.gdt.gov.vn

132 https://lanhsuvietnam.gov.vn/Lists/BaiViet/B%C3%A0i%20vi%E1%BA%BFt/DispForm.aspx?List=dc7c7d75-6a32-4215-afeb-47d4bee70eee&ID=125

133 https://dangkyquamang.dkkd.gov.vn

134 http://muasamcong.mpi.gov.vn/

135 http://cntt.moj.gov.vn/qt/tintuc/Pages/tin-van-phap-luat-ve-cntt.aspx?ItemID=34

regulating PPP investment in the field of information and communications. However, current regulations are not detailed enough to apply in practice.

+   Some agencies, such as VNSS and some provinces, have embarked on informal PPP models.

+   There are also examples of an indirect PPP model in which agencies hire outside (private sector) experts.

+   Finally, agencies can use the PM advisory board (where only 4 out of 24 organizations represented are from the government) as well as outside advice from VNPT, FTP, and Viettel, amongst others[136].

+   There is an e-procurement management system.[137]

-    The private sector does not provide digital government services but rather works with the government contractor to build systems and services to specification.

-    Existing PPP models are government-led and subject to rules and regulations, leaving the private sector as a vendor as opposed to an equal partner.

-    Private sector entities often say existing IT procurement policies contains challenges for both buyers and suppliers.

5.9   Are agencies encouraged by the Government to access emerging technologies (i.e., Cloud Vaults; Machine Learning; Internet of Things)? YELLOW/RED

+   MIC identifies big data & analytics, cloud computing, IoT, blockchain, and AI, as five key trends for 2018 for which there is a need to issue guidelines for agencies and provinces.

-    There are currently no specific policies in place in regards to emerging technologies.

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136   Decision No.415/QD-TTg of the Prime Minister and Decision No.222/QD-HDTV of the Prime Minister's Advisory Council for Administrative Procedure Reforms

137   http://muasamcong.mpi.gov.vn/

Assessment of Shared Infrastructure

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
5.1. Does the Government have established Enterprise Architecture(s) for ICT related standards?	YELLOW/GREEN	There is regulation on a standard e-government architecture framework since 2015 (version 1.0). The framework applies across agencies and at all levels of government.
5.2. Does the government have an e-Government Interoperability Framework with mandatory standards for each agency's systems?	YELLOW	There is regulation regarding an e-government interoperability framework since 2015, which includes technical standards on IT in agencies. This has subsequently been supplemented by additional regulation on national technical regulation, including in developing the priority national databases.
5.3. Does the government have established standards for Application Programming Interfaces (APIs) to develop applications or online services?	YELLOW/RED	There are examples of APIs; however, there is no government-wide policy in place. The development of such policy will be important for future purposes, especially in conjunction with open data policies (see next chapter).
5.4. Are shared digital platforms designed and used?	RED	There is no central data center and individual agencies select their own digital platforms (and servers). There is no government-wide cloud (see next point).
5.5. Does the Government use Cloud services, e.g., to promote quicker and/or more flexible delivery of services? Is the Government planning for Cloud migration?	YELLOW/RED	Some agencies have moved to cloud computing to various extent as they realize the benefits thereof. However, there is no government-wide cloud policy. One of the primary benefits of cloud computing is scale and interoperability. Hence it behooves the government to issue policy in this area in order to take advantage of economies of scale, in particular as it will be difficult to standardize disparate cloud solutions at a later stage.
5.6. Are there established secure government network(s) for the sharing of services and data among agencies? Is local Government connected to Central Government network?	YELLOW	There is a government network, which connects to local provinces; however, the level of security in practice from a technical perspective are unclear based on the collected data and analysis of this Assessment.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
5.7. Are there management information systems?	YELLOW	There are numerous government information systems, include e-procurement, tax, customs, and social insurance, amongst others. The quality of those systems, however, is unclear and there are some areas that do not appear to be covered, eg an identity MIS, although that could be forthcoming as the national databases are being developed.
5.8. Does the Government consider private sector to provide digital services? Did the Government sign any Public-Private Partnerships (PPP) in sourcing? Is there a centralized asset management system to track all DD acquisitions (equipment, software licenses, version management, etc.)	YELLOW	There is a central e-procurement system to track acquisitions, although a majority of bids are not submitted online. Similarly, there are several examples of PPPs in sourcing but they tend to be government-led as opposed to an equal partnership. Private sector actors also cite many challenges in working with the public sector, primarily during the procurement process. This is a common challenge in other countries as well but should not stop the government from trying to improve the current situation.
5.9. Are agencies encouraged by the Government to access emerging technologies (i.e., Cloud Vaults; Machine Learning; Internet of Things)?	YELLOW/RED	MIC has the foresight to identify emerging technologies of importance for which it aims to issue guidance in 2018. At the same time, there remains a lack of policies in regards to those areas, which means that proactive agencies are pursuing those technologies in an ad hoc way, which is a good sign but may have future repercussions in regards to standardization, amongst other challenges.
OVERALL	YELLOW/RED	There are clear regulations in regards to architecture and standards, and they appear to be followed by all accounts. More concerning, however, is the lack of policies in regard to emerging technologies, in particular cloud computing. As individual agencies move ahead with ad hoc adoption of emerging technologies in an effort to improve effectiveness it may come at the expense of future standardization and hence there is a need to quickly adopt policies in these areas.

6. Data Driven

Context: *Digital government transformation relies to a great extent on data driven activities. The ability to collect, store, analyze, and share data using emerging technologies is critical to improve service delivery. Available data can be used to improve decision-making and also lead to enhanced efficiency and generate external benefits. Leading countries in this area have established national "basic data registers" that enable government organizations to use and share a set of standardized data for greater effectiveness.*

6.1 Is government data available and used by policy makers and service providers? YELLOW/RED

+ Data is often produced as part of reports for top leadership.

+ There are surveys on the level of use and satisfaction of people and enterprises using online public services.[138]

+ Law No. 104/2016/QH13 dated April 06, 2016 of the National Assembly on access to information came into effect since 1 July, 2018.[139]

- The quality of data produced as part of reports for top leadership is unclear.

- Similarly, there is a lack of specific guidelines and transparent procedures on public engagement in policy making although policy makers at the central and local levels have considered citizens and businesses' feedback from the Vietnam provincial competitiveness index survey (PCI), Vietnam provincial governance and public administration performance index (PAPI), citizen satisfaction surveys at the one-stop shops and government portals.

6.2 Does the government have a data management strategy (collection, storage, sharing and re-use strategy)? Is it implemented? YELLOW

+ Agencies are encouraged to use shared data rather than collect their own. Article 7 of Decree 64/2007 / ND-CP Regulations on sharing of digital information among state agencies should be implemented in accordance with the following principle:

  o c) Not to re-collect the digital information provided by other state agencies, if the digital information contents are accurate and reliable.[140]

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138 https://dichvucong.most.gov.vn/dvc/Pages/KhaoSat.aspx

139 http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=184568; http://vbpl.vn/TW/Pages/vbpqen-toanvan.aspx?ItemID=11040

140 https://mic.gov.vn/phapdien/Pages/TinTuc/115696/dieu-3.2.LQ.7.-Trach-nhiem-quan-ly-nha-nuoc-ve-cong-nghe-thong-tin.html

+   Article 4, Decree No. 72/2013/ND-CP dated July 15, 2013 of the Government on management, provision and use of Internet services and online information.[141]

+   Decision No. 714/QD-TTg on 22 May 2015 establishes a list of priority national databases to be developed for potential collection, sharing and re-use.[142] They are:

  o   National population database;

  o   National land database;

  o   National business registration database;

  o   National demographic statistics database;

  o   National financial database; and,

  o   National insurance database.

+   Plans towards better data management are clear: the first priority for 2018 is to establish a national e-services portal; second, development of national databases; third, linking and sharing data and information amongst agencies.

-    Data management is in the early stages. Data management is fragmented by different agencies while collaboration in database collection and sharing is poor.

-    Development of national databases are in progress without a clear strategy of prioritization.

6.3   Is data collected from various devices (mobile, reactors, sensors, etc.) used within the government for economic and/or social development purposes? YELLOW/RED

+   At the national level there are only a few instances of data collection for economic and/or social development purposes. For example:

  o   Decision No. 24/QĐ-BGTVT dated January 07, 2016 of Ministry of Transportation, approved to pilot the application of science and technology in managing and connecting contract-based passenger transportation[143]

+   Similarly, there are some examples at the local level:

  o   IT application for Hanoi bus service.[144]

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141   https://www.vnnic.vn/tenmien/chinhsach/ngh%E1%BB%8B-%C4%91%E1%BB%8Bnh-s%E1%BB%91-72-2013-n%C4%90-cp-ng%C3%A0y-15-th%C3%A1ng-07-n%C4%83m-2013-c%E1%BB%A7-ch%C3%ADnh-ph%E1%BB%A7-h%C6%B0%E1%BB%9Bngd%E1%BA%ABn-v%E1%BB%81

142   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Decision-714-QD-TTg-databases-requiring-priority-development-to-establish-e-government-development-320788.aspx

143   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyetdinh-24-QD-BGTVT-thi-diem-ung-dung-khoa-hoc-cong-nghe-quan-ly-van-tai-hanh-khach-theo-hopdong-306217.aspx

144   http://www.mt.gov.vn/moitruong/quy-chuan-chatluong/14882/ha-noi--ung-dung-cong-nghe-cao-trong-van-hanh-va-quan-ly-xe-buyt-.aspx

o   Hanoi environment monitoring system.[145]

o   One of the primary tasks of the project to make Ho Chi Minh City become a smart city is to build a shared data warehouse and develop an open data ecosystem for the city which will become the foundation for the deployment of information systems of the city, serving the people, businesses, administrative departments, districts, and the management and direction of the city leaders.

o   During the first phase of smart city development 2017-2020, necessary infrastructure will be put in place for data collection and sharing to support a data ecosystem in HCMC.

-    There is no government-wide strategy for data collection from various devices and existing initiatives are ad hoc.

-    Data collection from various devices are in the early stages, and collected data not being shared for additional value creation. For instance, the data on commercial vehicle tracking system is held by the road directorates and not shared more widely for improving e-commerce, transportation planning and services.

6.4 Does Government have Data Sharing Agreements or Data Exchange Protocols with any third party? YELLOW

+   In 2007, the government issued policy on information sharing. Decree No. 64/2007 / ND-CP on information technology application and information sharing in e-government.[146]

+   Law on Access to Information No. 104/2016 / QH13 on Access to Information from Government and Third Parties.[147]

+   Itrithuc, an open data portal under the authority of MoST, is operated by private sector entities.[148]

-    Data-sharing agreements with third-parties are uncommon. Though the legal framework is available, implementation is poor while few database are shared with little impact.

6.5 Has a National Spatial Data Infrastructure been defined? Is there a common GIS platform used? YELLOW

+   GIS is under the purview of MoNRE who has issued Circular 75/2015/TT-BTNMT, which spells out in detail the technical standards for data layers.[149] There are seven layers

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145   http://hanoi.gov.vn/quantracmoitruong

146   http://www.moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=14492

147   https://thuvienphapluat.vn/van-ban/Bo-may-hanh-chinh/Luat-tiep-can-thong-tin-2016-280116.aspx

148   https://itrithuc.vn/

149   https://thuvienphapluat.vn/van-ban/Bat-dong-san/Thong-tu-75-2015-TT-BTNMT-quy-dinh-ky-thuat-co-so-du-lieu-dat-dai-320823.aspx

of information: legal documents, cadasters, land price, land use, statistics and inventory, land quality, and inspection data.

+   Circular 75 is very clear in the levels of disaggregation available.

+   Since 2000, there is a national standard reference system, which is VN2000.

-    It is unclear to which extent (if at all) other agencies have adopted the standards provided by MoNRE.

+   Law No. 27/2018 /QH14 dated 14 June 2018 on Topography and Cartography, effective on 1 January 2019, specifying the national geospatial infrastructure: general provisions on national geospatial data infrastructures; the development of national geospatial data infrastructure; national geospatial data; services on national geospatial data; use national geospatial data; National Geospatial Information Portal.

6.6   Is there a plan or a framework adopted by the Government to use Big Data? YELLOW/ RED

+   MIC identifies big data & analytics among five key trends for 2018 for which there is a need to issue guidelines for agencies and provinces (the others being cloud computing, IoT, blockchain, and AI).

+   There are a few instances where government collects data that can potentially be used for analytics. For example, Decision No. 24/QĐ-BGTVT dated January 07, 2016 of Ministry of Transportation, approved to pilot the application of science and technology in managing and connecting contract-based passenger transportation[150]

-    There are currently no specific policies in place in regard to big data & analytics.

6.7   Has the government adopted Open Data policies? Is Government pro-actively releasing open data sets and encouraging the use of data sets? YELLOW [see next chapter for details]

+   Law No. 104/2016/QH13 dated April 06, 2016 of the National Assembly on access to information.[151]

+   Some provinces have established open data policies, such as Da Nang.[152]

+   Itrithuc, an open data portal under the authority of MoST, is operated by private sector entities.[153]

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150   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyetdinh-24-QD-BGTVT-thi-diem-ung-dung-khoa-hoc-cong-nghe-quan-ly-van-tai-hanh-khach-theo-hopdong-306217.aspx

151   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=184568

152   http://opendata.danang.gov.vn

153   https://itrithuc.vn/

- There are currently no specific policies in place in regard to open data.

- The law on access to information is not yet in effect, and open data provisions potentially restricted by the to-be-promulgated state secret law.

6.8 Has the government defined, digitized and shared a set of "basic data registers"? YELLOW/RED

+ Decision No. 714/QD-TTg on 22 May 2015 establishes a list of priority national databases to be developed for potential collection, sharing and re-use.[154] They are:

    o National population database;

    o National land database;

    o National business registration database;

    o National demographic statistics database;

    o National financial database; and,

    o National insurance database.

- National databases are in progress at various stages of development.

- The main challenges to further development are said to be a lack of financial resources, the legal environment, and a lack of standards.

6.9 For each basic register, has the government defined institutional responsibilities for the operation, update, and sharing of the register's data? YELLOW

+ MIC provides guidance according to the implementation of national databases and work with agencies in charge of each individual national database to develop and issue standards for design, compliance, and operation.

+ Operation of databases is done by line ministries whereas coordinating data-sharing and ensuring safety and effectiveness is the mandate of MIC.

    o For example, MoPS is assigned to develop the national demographic database consisting of 15 fields and MIC is working with the ministry until 2020 to complete collection of data and sharing it across agencies.

- There is a lack of coordination resulting in a waste of resources. For example, VNSS is developing their own database on national identification, using biometrics.

- Sharing of database information is subject to regulations that are sometimes unclear, such as the Ordinance of State Secrets.

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154   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Decision-714-QD-TTg-databases-requiring-priority-development-to-establish-e-government-development-320788.aspx

6.10 Are all government agencies legally required to use basic registers rather than collect and hold their own data? YELLOW

+   Agencies are encouraged to use shared data rather than collect their own. Article 7 of Decree 64/2007 / ND-CP Regulations on sharing of digital information among state agencies should be implemented in accordance with the following principle:

c)   Not to re-collect the digital information provided by other state agencies, if the digital information contents are accurate and reliable.[155]

-    National databases are under development and hence there are currently no requirements to use them.

-    There are no restrictions to agencies developing their own data and hence some agencies have proactively pursued this approach rather than wait for national database development.

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155   https://mic.gov.vn/phapdien/Pages/TinTuc/115696/dieu-3.2.LQ.7.-Trach-nhiem-quan-ly-nha-nuoc-ve-cong-nghe-thong-tin.html

Assessment Of Data Driven

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
6.1. Is government data available and used by policy makers and service providers?	**YELLOW/RED**	Government agencies collect data from users that can be potentially used in policy-making, although there is no evidence that it actually is. Reports to top management, which are elaborate, include data but the quality is unclear and it is not evident that it is being used. Overall, data is available but performance monitoring could be enhanced to enable policy-makers to make better use of it.
6.2. Does the government have a data management strategy (collection, storage, sharing and re-use strategy)? is it implemented?	**YELLOW**	There is regulation in regards to data management, in particular in limiting the need to re-collect information. There is also an initiative to establish key national databases. At the same time, there is no government-wide strategy regarding data management and implementation (and potential sharing and re-use) of national data is unclear.
6.3. Is data collected from various devices (mobile, reactors, sensors, etc.) used within the government for economic and/or social development purposes?	**YELLOW/RED**	Data is collected from various devices, although this process is ad hoc rather than driven by central guidelines tied to socio-economic purposes. Given the high rate of mobile penetration and decreasing prices of sensors along with smart city development initiatives, this represents an untapped opportunity to amass greater amounts of data from which decisions can be made.
6.4. Does Government have Data Sharing Agreements or Data Exchange Protocols with any third party	**YELLOW**	There are no data-sharing agreements per se; however, Itrithuc, an open data portal under the authority of MoST, is operated by private sector entities. The law on access to information may also provide a basis for new agreements.
6.5. Has a National Spatial Data Infrastructure been defined? Is there a common GIS platform used?	**YELLOW**	There is a common GIS platform in use, defined and operated by MoNRE. It is unclear to the extent that other agencies are using this platform.

Question Area	Assessment	
	Red/ Yellow/ Green rating	Commentary
6.6. Is there a plan or a framework adopted by the Government to use Big Data?	**YELLOW/RED**	MIC has identified big data & analytics as one of five key trends for which to issue further guidance in 2018; however, there are currently no policies in this area. As the government enhances data collection efforts (see above), this becomes increasingly important to deliver better public services, as evidenced by international best practices, such as in Singapore.
6.7. Has the government adopted Open Data policies? Is Government pro-actively releasing open data sets and encouraging the use of data sets?	**YELLOW**	There are no policies per se but there are steps in the right direction. For detail, see the next chapter.
6.8. Has the government defined, digitized and shared a set of "basic data registers"?	**YELLOW/RED**	The government has defined a set of six national databases, which are under development in various stages of progress. This is undoubtedly a step in the right direction. Digitization and sharing of those basic data registers, however, remains to be seen.
6.9. For each basic register, has the government defined institutional responsibilities for the operation, update, and sharing of the register's data?	**YELLOW**	There are institutional responsibilities to establish the set of six national databases but the potential of sharing remains to be seen when they are finished. In particular, information-sharing in general is limited and hence may warrant potential concern regarding key data once it is collected.
6.10. Are all government agencies legally required to use basic registers rather than collect and hold their own data?	**YELLOW**	Agencies are encouraged to re-use data rather than collect their own; however, in practice many agencies do not follow this advice. As the national databases are in development it is too early to assess whether this trend will continue and whether regulations will be issued to require them to use the same registers, something that should be encouraged.
OVERALL	**YELLOW**	There is a defined set of key national databases (basic data registers) under development. In addition, the government collects some data, including from users and in some instances from sensors. However, data collection remains an untapped opportunity, in particular as several localities move towards smart city development and the level of information-sharing remains low.

7. Cybersecurity, Privacy and Resilience

Context: Digital government progress must be matched by strong cybersecurity, privacy and resilience efforts in order for users to maintain trust in public sector online information and services. Cybersecurity is particularly important to safeguard personal data and requires cross-agency and international collaboration to meet growing threats.

7.1 Does the Government have cybersecurity framework that applies to critical digital platforms and services? YELLOW/GREEN

+   Article 7 of Decree 64/2007 / ND-CP Regulations on sharing of digital information among state agencies should be implemented in accordance with the following main principles:

    o   a) To satisfy the information safety requirements prescribed in Article 41 of this Decree.[156]

+   Decision No. 898/QD-TTg dated May 27, 2016 of the Prime Minister, approving the orientation, objectives and duties to ensure the Cybersecurity for the period of 2016 – 2020.[157]

+   Resolution No. 36A / NQ-CP on e-Government addresses strengthening of information security.[158]

+   Decision 63/QĐ-TTg Approving the national digital information security development plan up to 2020. Budget allocation to ensure information safety from central to local levels in the state sector (central budget preservation ensuring the security of the national information system, local budgets to ensure information safety for local agencies).[159]

+   Law No. 86/2015/QH13 dated November 19, 2015 of the National Assembly on Cyber information security.[160]

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156   https://mic.gov.vn/phapdien/Pages/TinTuc/115696/dieu-3.2.LQ.7.-Trach-nhiem-quan-ly-nha-nuoc-ve-cong-nghe-thong-tin.html

157   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=184874

158   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Nghi-quyet-36a-NQ-CP-Chinh-phu-dien-tu-292787.aspx

159   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Quyet-dinh-63-QD-TTg-phe-duyet-Quy-hoach-phat-trien-an-toan-thong-tin-so-quoc-gia-den-nam-2020-100235.aspx;   http://egov.chinhphu.vn/bao-mat-va-an-toan-thong-tin-trong-trien-khai-chinh-phu-dien-tu-a-NewsDetails-37510-14-186.html

160   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=183196; http://vbpl.vn/TW/Pages/vbpqen-toanvan.aspx?ItemID=11048

+   On 12 June 2018, the Law on Cybersecurity was officially adopted at the 5th Session of the XIV National Assembly and will come into effect on 1 January 2019 (not in time to be a formal part of the assessment), which clearly states that the information system on national security is put into operation and used after being certified as cyber secured.

+   On 16 March 2017, the Prime Minister issued Decision No. 05/2017/QD-TTG on providing emergency response plans to ensure national cyber information security. Decision No. 05 has laid out the basic framework for reporting and responding to cyber information security incidents. More recently, MIC issued Circular No. 20/2017/TT-BTTTT on 12 September 2017 on the coordination and response to cyber information security incidents nationwide.[161] Incidents under the authority of the Ministry of National Defense ("MoD") and MoPS are not covered by Decision No. 05 and Circular No. 20.

+   Agencies are also deeply aware of cybersecurity and have issued internal guidelines and standards; for instance, MoF works with MoPS, MIC and the national CERT; SBV issue weekly report on attacks and recommendations.

-    There remain issues in collaboration as some agencies view cybersecurity as one-way information-sharing at the moment.

7.2   Does the government have a CERT/SOC capable and ready to prevent, respond and recover from cyber incidents? YELLOW/GREEN

+   The government has established a CERT (VNCERT), which serves as a coordinator of computer incident response nationwide and is the focal point for foreign CERTs.[162] VNCERT is under the management of MIC.

+   Information security and cybersecurity involve the participation of many peer agencies such as the MIC, the MoPS, the Ministry of Defense and the Government Cipher Commission in the OOG.

-    The cyber security task force under the Ministry of Public Security shall assume the prime responsibility for dealing with cyber security errors, incidents happen to essential information system on national security, except military systems (chaired by the Ministry of Defense) and the cipher system (chaired by the Government Cipher Committee).

-    The extent and procedure of collaboration are unclear and weak, although this is a common challenge across countries when it comes to cybersecurity.

7.3   Does the government collaborate with domestic and international organisations to mitigate cyber risks? YELLOW/GREEN

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161   https://f.datasrvr.com/fr1/517/63504/Client_Alert_-_Decision_05_and_Circular_20.pdf

162   http://www.vncert.gov.vn/

+   VNCERT collaborates with foreign CERTs, such as APCERT.[163]

+   There are instances in which government agencies collaborate amongst themselves; for instance, SBV has cybersecurity collaboration with MIC and MoPS.

-    Despite intra-government collaboration, more could be done to enhance cross-agency collaboration when it comes to cybersecurity.

-    International collaboration in cybersecurity can always be improved.

-    Illegal software and the use of IT products of unclear origin is a particular issue in Vietnam, as it is not uncommon but raises great cybersecurity risks.

7.4   Is there a Data Protection Law and/or Privacy regulation? YELLOW/RED

+   Decree No. 64/2007 / ND-CP on the application of information technology in state agencies. Personal information protection measures include: purpose of use of personal information; supervising the processing of personal information; issuing procedures for checking, correcting or cancelling personal information; Other technical measures.[164]

-    Privacy laws have improved in recent years but remain patchy compared to international standards.[165]

-    Data protection is mentioned in the Law on Cybersecurity (not in time to be a formal part of the assessment) and a Decree is forthcoming to provide detailed guidelines for implementation.[166]

7.5   Do citizens know what data about them is being shared? RED

+   Individual agencies have plans to enable citizens to access their own information after 2020.

-    Currently, citizens do not have access to their own information and would not know what data is being shared about them given a lack of Data Protection.

7.6   Does the National Critical Infrastructure Plan include digital government infrastructures, platforms, and services? RED

+   Decision no 55/2007/QĐ-TTg to Approve the list of target industries and spearhead industries 2007-2010, vision to 2020 and some policies to encourage their development.[167]

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163   www.vncert.gov.vn/baiviet.php?id=90

164   https://thuvienphapluat.vn/van-ban/Cong-nghe-thong-tin/Nghi-dinh-64-2007-ND-CP-ung-dung-cong-nghe-thong-tin-trong-co-quan-Nha-nuoc-18234.aspx

165   http://cloudscorecard.bsa.org/2016/pdf/country_reports/2016_Country_Report_Vietnam.pdf

166   http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=183196; http://vbpl.vn/TW/Pages/vbpqen-toanvan.aspx?ItemID=11048

167   http://moj.gov.vn/vbpq/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=14420

The list includes seven target industries and three spearhead industries, although there is no mention about digital government related industry.

- Currently Vietnam does not appear to have a national critical infrastructure plan.

Assessment of Cybersecurity, Privacy and Resilience

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
7.1. Does the Government have cybersecurity framework that applies to critical digital platforms and services?	**YELLOW/GREEN**	The government is well-aware of the importance of cyber security. As such, there are cybersecurity standards and processes in place and the Law on cybersecurity was recently passed (not in time to be a formal part of the assessment).[168]
7.2. Does the government have a CERT/SOC capable and ready to prevent, respond and recover from cyber incidents?	**YELLOW/GREEN**	The government has a CERT in the form of VNCERT, operated by MIC, that is capable of preventing, responding and recovering from cyber incidents. MoPS collaborates in VNCERT but its role could be elevated to take advantage of additional skills and to enhance information security.
7.3. Does the government collaborate with domestic and international organisations to mitigate cyber risks?	**YELLOW/GREEN**	VNCERT collaborates with international organizations, such as APCERT, although more cooperation is always better when it comes to cybersecurity. For instance, bilateral agreements have proven effective when identifying particular threats.
7.4. Is there a Data Protection Law and/or Privacy regulation?	**YELLOW/RED**	There is no Data Protection Act or Law. Improvements in this area has been made, however, but it lags international standards.
7.5. Do citizens know what data about them is being shared?	**RED**	Since there is no Data Protection Act or Law, little is known about the data being held or potentially shared by government.

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168   The National Assembly of Vietnam passed the Law on Cybersecurity ("Law") on 12 June 2018 after the release of the first draft of the Law. This Law will take effect on 1 January 2019 (not in time to be a formal part of the assessment) and is available here: http://vneconomy.vn/toan-van-luat-an-ninh-mang-trinh-quoc-hoi-thong-qua-20180612081624814.htm

Assessment of Cybersecurity, Privacy and Resilience (cont)

Question Area	Assessment	
	Red/ Yellow/ Green rating	**Commentary**
7.6. Does the National Critical Infrastructure Plan include digital government infrastructures, platforms, and services?	**RED**	There is no national critical infrastructure plan.
OVERALL	**YELLOW**	There are strong fundamentals for cybersecurity in terms of regulations, collaborations, and a forthcoming law on the topic. At the same time, there are weaknesses in data protection policies and in identifying critical infrastructures.

Conclusion

The DGRA is designed to evaluate the current potential for digital government development across seven key dimensions: leadership and governance, user focus, business process change, capabilities, culture and skills, shared infrastructure, data driven, and cybersecurity, privacy and resilience. The aim of the exercise is to help identify areas for potential improvement moving forward. Across dimensions, the particular strengths and weaknesses are identified as follows:

- **Leadership and governance:** Overall, this is arguably the strongest dimension, relative to others, as top leadership exhibit strong support for Industry 4.0 and the role that digital government can support such transformation.[169] The main challenges are a lack of funding to implement initiatives and a gap in commitment between the top and middle-management levels, and by extension a lack of tracking performance of initiatives. Additionally, there are clear challenges in coordination and implementation resulting in a gap between policy and practice.

- **User focus:** There are individually strong user focus aspects, such as overall regulations focusing on feedback mechanisms, mobile services, e-inclusion efforts, and web accessibility, amongst others. At the same time, there is a lack of measuring progress and performance in practice.

- **Business process change:** There are many relevant regulations and policies in place, and the proposed development of the six national databases (in progress) are steps in the right direction. Simultaneously, however, there is a clear lack of change management initiatives and agile development methods.

- **Capabilities, culture and skills:** Overall, this is arguably the weakest dimension, relative to others. This is a concern but also ironic given the high level of skills availability in the country generally. Hence, the challenge is not in producing top talent but rather to be able to attract them to work in the public sector. Outsourcing to the private sector is possible but lack of finances is cited as the biggest barrier and hence remains a limited option.

- **Shared infrastructure:** There are many regulations and policies covering shared infrastructure but the reality is that there remains a lack of data-sharing platforms in practice. A key concern is also the lack of regulations regarding emerging technologies, in particular cloud computing.

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169   https://mic.gov.vn/Upload/Store/tintuc/vietnam/64/Khung-Kien-truc-CPDT-VN.pdf

- **Data driven:** Data initiatives have gained momentum and there are isolated examples of good use. The proposed development of the six national databases is one case in which there is a policy but implementation of such "basic data registers" is only in progress. Given the desire to move towards smart city development, data remains an untapped opportunity overall.

- **Cybersecurity, privacy and resilience:** There are clear regulations and divisions of labor when it comes to cybersecurity. There are also strong technical capabilities in this area. The main weaknesses are a lack of data security, data protection and critical infrastructure policies, the low awareness on cybersecurity of citizens and organizations, the poor collaboration and coordination procedures among private and public sectors regarding information security and cybersecurity, all of which need to be addressed.

Next steps: Moving forward, Vietnam has clear priorities for 2019 and beyond: First, to develop a national portal; second, to develop the six key national databases; and, third to link and share data and information among agencies. Vietnam is well-placed for such development as all (100%) of agencies and local government entities already have a web presence.[170] Some cities and provinces also provide advanced services. Ho Chi Minh City, for example, offers 300 online public services at level 3 with an aim to move to level 4.[171] Beyond 2018, there is a general plan until 2020: First, to provide a full range of online services; second, to apply information technology in the operation of state agencies; third, to improve technical infrastructure, information systems, and national databases; and, fourth, to implement pilot projects on smart cities.[172]

To further improve digital government development, however, a clear implementation roadmap is needed, with defined targets and performance monitoring indicators, as well as adequate financial and personnel resources attached. It is recommended that such a roadmap adopts a series of measure to strengthen current weaknesses, such as creating a government-wide CIO position, enhancing performance monitoring, establishing standards surrounding emerging technologies, and prioritize areas of development, including for the six key national databases. The action plan in the next section proposes two priorities per dimension to overcome identified weaknesses.

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170   http://mic.gov.vn/solieubaocao/Pages/TinTuc/134370/Bao-cao-danh-gia-muc-do-ung-dungcong-nghe-thong-tin-cua-cac-Bo--co-quan-ngang-Bo--co-quan-thuoc-Chinh-phu-va-cac-tinh--thanhpho-truc-thuoc-Trung-uong-nam-2016.html

171   http://www.hochiminhcity.gov.vn/thongtinthanhpho/thongtintuyentruyen/Lists/Posts/Post.aspx?List=49d70ac4-60f7-40fd-9c0a-8d03227ab911&ID=6934&Web=9e81d926-527c-4781-b409-f054619f1528

172   http://www.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=2&mode=detail&document_id=181898

Action Plan

The action plan is a recommended set of activities based on the findings according to the seven dimensions of DGRA, outlined above, ranging from a total of 15 short-term actions to long-term actions aimed at sustaining digital government into the future.

Leadership and Governance

Elevating the status of the existing e-Government task force based at OoG (APCA) to assume this role: The elevation for the task foces will help improve coordination and implementation; the head of the authority or task force should be given broad responsibilities and report directly to the Prime Minister (assuming the government-wide "CIO" position). The existing "CIO Council" of IT Directors should be part of the authority or task force. Key tasks would include establishing a monitoring & evaluation (M&E) framework and secure budget for cross-agency implementations as well as enhancing information-sharing.

o   Responsibility: Office of the Government

o   Time needed: 3-6 months

o   Cost: N/A

o   References:

- Bahrain e-government authority[173]

- Singapore Smart Nation and Digital Government Office[174]

Develop IT spend control policy: A lack of budget is consistently mentioned as a key barrier towards digital government development. This is an issue in many countries; however, leading ones have developed policies for how to maximize efficiency of available resources to seize the benefits of economies of scale and avoid duplications. A centrally coordinated IT spent control policy will enhance the use of available resources.

o   Responsibility: OoG and MoF

o   Time needed: 4-8 months

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173   https://www.bahrain.bh/wps/portal/!ut/p/a1/rZLLbsIwEEV_BRZZBk9i8uouRZQW8aigtMQb5CQmSUnsEMyjf-18HVKmVoFCp3nl07vjeGSOC5ohwussSKjPBaV7fib14HINtmK7Zd_EMgz-2OxOvC0YPLAUE3wHAuFsDzr-Pz6pm2C7fpwRx2jKe20g-HAL57Pxm8PHQAevia_g0RRCIuS5migCViV4pK0nzBuAapKJgG620WrRp5xlcbD-WgotrJRc6ziBePyTKnuWEZZjIKlFzkGMKwzA6jetlisU2q6um2HsRdboQHY-0pw4fhXJzBl_JTiyhyPwG-DOg-GXfQTKqHPRieow_WPy_g3Lzd7Xa-KrFQku2UGi-T_tSL2d5CI8ftHA5yF2E0QqtmQVq1rbSpVTKcvNnQYa7P-f7ViJEkrNWJAoNzklSsVHmfpKoLGazwsUfer-7HI10Elr5buA3m5_UaeP8/dl5/d5/L2dBISEvZ0FBIS9nQSEh/

174   https://www.smartnation.sg/

o   Cost: N/A

o   References:

•   UK Government Digital Service[175]

User Focus

Develop an e-participation portal: Currently, agencies have their own feedback mechanisms. There is also a system of receiving comments and opinions from citizen and businesses on the Government portal. However, the efficiency is still moderate. This system should be more advocated to encourage more suggestions/comments/opinions. The development of a national e-services portal is a good opportunity to include the establishment of a central e-participation portal that will enhance citizen interaction and improve the process for integrating feedback in a central manner. The availability of a central portal will also enhance trust and transparency, which is one of the key objectives of e-government as stated by the Prime Minister. In addition, an e-participation portal will also help the stated objective of improving in the United Nations e-government ranking.

o   Responsibility: MIC or OoG

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

•   United Kingdom Consultations[176]

•   South Korea e-People portal[177]

Create a digital by default policy: Individual agencies are generally encouraged to implement digital services to level 4; however, there is no policy that services have to be made digital by default, meaning they should be available electronically in the first instance and then supported by offline channels. Making all services digital by default creates an opportunity for cost savings and enhances convenience for users. For example, research found that converting offline transactions to online ones could save the UK government between £3.30 and £12 per transaction. Hence, if everyone in the UK was online the potential total economic return would be at least £22 billion.

o   Responsibility: DG authority

o   Time needed: 12-24 months

o   Cost: N/A

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175   https://gds.blog.gov.uk/2018/05/02/were-improving-the-digital-and-it-spend-controls-process/

176   https://www.gov.uk/government/publications?publication_filter_option=consultations

177   https://www.epeople.go.kr/jsp/user/on/eng/intro01.jsp

o   References:

   •   UK Government Digital Service[178]

Business Process Change

Create a priority list for the development of the six key national databases: The list of databases is well-established but there is currently prioritization and given limited funding progress has been uneven without any of them being finished. Hence the list needs to be prioritized in order to enable some to be completed faster and reap the full benefits of referential data that can be used to enhance digital transformation and provide a basis for improved change management procedures.

o   Responsibility: MIC

o   Time needed: 4-8 months

o   Cost: N/A

o   References:

   •   Estonia X-road[179]

Develop agile development standards: Currently, the process of development of e-government, from initial procurement to actual implementation, is rigid. Government suppliers voice their concern about specific requirements during the bidding process and during implementation. As such, there needs to be a policy that enables greater flexibility while meeting stated objectives; good practice countries have therefore enabled agile development standards.

o   Responsibility: OoG and MIC

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

   •   UK Government Digital Service[180]

Capabilities, Culture and Skills

Create incentives for talent to work in the public sector: After a lack of finances, the biggest challenge facing digital government in Vietnam is cited as a lack of talent due to the fact that high-skilled people go to work in the private sector. The task force (see leadership and governance, above) and implementing agencies should encourage recruitment by increasing remuneration, in part based on performance standards. However, if budget is a limiting factor

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178   https://gds.blog.gov.uk/2014/04/01/a-year-in-the-making-the-digital-by-default-service-standard/

179   https://e-estonia.com/solutions/interoperability-services/x-road/

180   https://www.gov.uk/service-manual/service-standard/use-agile-methods

there are a number of other incentives that can be implemented, such as clearer career paths and non-monetary benefits like a flexible working environment.

o Responsibility: Task force of National Committee of eGovernment and steering boards at ministries and provinces.

o Time needed: 12-24 months

o Cost: N/A

o References:

- Singapore government salaries[181]

- The South Australian Government flexibility for the future[182]

DG authority to create more training programs for IT staff in ministries and agencies: There are few internal programs to enhance current skill levels for IT staff across ministries and agencies. Leading countries, such as the United Kingdom, have programs to ensure all departments have appropriate digital capability in-house, including specialist skills.

o Responsibility: DG task force

o Time needed: 12-24 months

o Cost: N/A

o References:

 o United Kingdom government digital strategy[183]

Develop a roadmap for digital transformation, including bridging digital divides and improving digital skills: There is no overarching plan to adapt to digital transformation and its consequences. There are isolated efforts to enhance digital skill levels and to bridge digital divides, primarily urban/rural divides in terms of infrastructure. However, such efforts are not integrated and there is a risk that a lack of oversight of the bigger picture will leave vulnerable populations without the skills to use e-government services.

o Responsibility: OoG and MIC

o Time needed: 6-12 months

o Cost: N/A

o References:

- Sweden digital transformation[184]

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181   https://www.careers.gov.sg/build-your-career/career-toolkit/salary-and-benefits
182   https://publicsector.sa.gov.au/people/flexibility-for-the-future/
183   https://www.gov.uk/government/publications/government-digital-strategy-action-3
184   https://www.government.se/press-releases/2017/06/action-on-digital-transformation/

Shared Infrastructure

Develop regulation(s) for cloud computing, including the establishment of a government cloud: Among emerging technologies, cloud computing stands out as an area that needs particular attention because some agencies have already started to adopt it, which means that there could be future challenges in terms of standardization and interoperability at the expense of economies of scale. Hence regulations in this area are urgently needed. In addition, there needs to be policy on the development of a government-wide cloud.

-wide cloud.

o   Responsibility: Office of the Government and MIC

o   Time needed: 4-8 months

o   Cost: N/A

o   References:

   •   Philippines Government Cloud[185]

   •   Hong Kong SAR Cloud Strategy[186]

Establish policy to use open standards and common platforms: Standards are issued by MIC; however, the guidance lags technological progress (as evidenced by the lack of cloud computing advise, above). There needs to be greater emphasis on using open standards and common platforms across new and emerging technologies, which will help save time, money and effort as such policy enables greater efficiency. In addition, common use of existing templates enhances trust among users, as evidenced by good practice countries.

o   Responsibility: OoG, MIC and DG authority

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

   •   UK Digital Government Service[187]

Data Driven

Enhance performance monitoring as it relates to data collection and sharing: Policies are in place for the collection, sharing, and re-use of data; however, in practice there is limited information-sharing across agencies. A key barrier is that data-sharing is not being monitored. Hence there needs to be stronger oversight of performance in implementation of data collection and sharing, which would benefit not only individual agencies but also policy-makers who

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185   http://i.gov.ph/govcloud/

186   https://www.ogcio.gov.hk/en/our_work/strategies/government/cloud_strategy/develop_gov_cloud.html

187   https://www.gov.uk/service-manual/service-standard/use-open-standards-and-common-platforms

can make more informed decisions based on information. In addition, take stock of available datasets and issue standards for sharing and opening the data (see also next chapter).

o   Responsibility: OoG and DG task force

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

   •   United Kingdom Government Transformation Strategy[188]

   •   United States GAO[189]

Create a performance monitoring platform: In addition to strengthening oversight of performance (see above), there is an opportunity to create a platform where government ministries, agencies, and municipalities can report progress (or lack thereof) electronically. Such a platform would create real-time assessment and serve as the basis for monitoring performance in an efficient manner.

o   Responsibility: OoG, MIC and DG authority

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

   •   UK Digital Government Service[190]

Cybersecurity, Privacy and Resilience

Establish data protection and national critical infrastructure regulations: There are no policies in these areas, which is a particular weakness compared to other countries. Data protection can be considered "strong" or "weak" but it needs to be in place in order to enhance transparency. With regards to national critical infrastructure, this is a broader topic than e- government specifically but should include an element thereof as Vietnam becomes increasingly reliant on digital infrastructure.

o   Responsibility: Office of the Government, DG task force, MIC and MoPS

o   Time needed: 12-24 months

o   Cost: N/A

o   References:

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188   https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy-better-use-of-data

189   https://www.gao.gov/key_issues/data-driven_decision_making/issue_summary

190   https://www.gov.uk/service-manual/service-standard/report-performance-data-on-the-performance-platform

- European Union General Data Protection Regulation (GDPR)[191]

- United Kingdom National Critical Infrastructure[192]

- United States Critical Infrastructure Sectors[193]

Create an annual cybersecurity awareness campaign: With an increase in digital dependency, including digital government, there is simultaneously a greater need to improve cybersecurity knowledge amongst users. Good practice countries not only teach cybersecurity in schools but have also created national awareness campaigns about online safety, which is a low-cost and potentially high-reward effort.

o   Responsibility: MIC and MoPS

o   Time needed: 6-12 months

o   Cost: N/A

o   References:

- Government of Singapore awareness campaign[194]

- United States awareness campaign[195]

Tabular View

This section summarizes the Action Plan in a tabular view. Only short and mid- term actions are listed in this tabular view, as long-term actions are based on the evolution of the country context.

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191   https://www.eugdpr.org/

192   https://www.cpni.gov.uk/critical-national-infrastructure-0

193   https://www.dhs.gov/critical-infrastructure-sectors

194   https://www.csa.gov.sg/news/press-releases/csa-launches-second-national-cybersecurity-awareness-campaign

195   https://www.dhs.gov/national-cyber-security-awareness-month

Vietnam Digital Government Initiative

Activities	Resp.	Costs	Y1												Y2												Y3				
			04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	01	02	03	04	05
LEADERSHIP AND GOVERNANCE																															
Short-Term Action																															
Create a stand-alone digital government authority OR elevate the status of the existing National Committee on e-GOV and its task force to assume this role	OoG	N/A				▓	▓	▓	▓																							
Develop IT spend control policy	OoG + MoF	N/A				▓	▓	▓	▓																							
USER FOCUS																															
Short-Term Action																															
Develop an e-participation portal	MIC	N/A								▓	▓	▓	▓	▓	▓	▓																
Medium-Term Action																															
Create a digital by default policy	DG authority	N/A															▓	▓	▓	▓	▓	▓							▓	▓	▓	▓
BUSINESS PROCESS CHANGE																															
Short-Term Actions																															
Create a priority list for the development of the six key national databases	OoG	N/A						▓	▓	▓	▓																					
Develop agile development standards	OoG + MIC	N/A								▓	▓	▓	▓	▓	▓	▓																

Vietnam Digital Government Initiative

Activities	Resp.	Costs	Y1 04	05	06	07	08	09	10	11	12	01	02	03	Y2 04	05	06	07	08	09	10	11	12	01	02	03	Y3 04	05
CAPABILITIES, CULTURE AND SKILLS																											
Short-Term Actions																											
Develop a roadmap for digital transformation, including bridging digital divides and improving digital skills	OoG + MIC	N/A								▓	▓	▓	▓	▓	▓	▓												
Medium-Term Action																											
Create incentives for talent to work in the public sector	DG authority	N/A															▓	▓	▓	▓	▓	▓	▓	▓	▓	▓		
Create more training programs for IT staff in ministries and agencies	DG authority	**N/A**															▓	▓	▓	▓	▓	▓	▓	▓	▓	▓		
SHARED INFRASTRUCTURE																											
Short-Term Action																											
Develop regulation(s) for cloud computing, including the establishment of a government cloud	OoG + MIC	N/A					▓	▓	▓	▓	▓																	
Establish policy to use open standards and common platforms	OoG + MIC + DG authority	N/A										▓	▓	▓	▓	▓												

Vietnam Digital Government Initiative

Activities	Resp.	Costs	Y1 04	05	06	07	08	09	10	11	12	01	02	03	04	05	Y2 06	07	08	09	10	11	12	01	02	03	04	05	Y3 01	02	03	04	05
DATA DRIVEN GOVERNMENT																																	
Short-Term Action																																	
Enhance performance monitoring as it relates to data collection and sharing	DG authority	N/A								�																							
Create a performance monitoring platform	OoG + MIC + DG authority	N/A																															
CYBERSECURITY, PRIVACY AND RESILIENCE																																	
Short-Term Action																																	
Create an annual cybersecurity awareness campaign	MIC + MoPS	N/A																															
Medium-Term Action																																	
Establish data protection and national critical infrastructure regulations	OoG + DG authority + MIC + MoPS	N/A																															

3

ODRA

Overview

At the request of the Government of the Socialist Republic of Vietnam, the World Bank conducted an Open Data Readiness Assessment (ODRA) from July 2017 till January 2018, including a field mission from 15 to 25 January 2018.

The result of this study gives a coherent picture of the strengths and barriers for the implementation of an open data initiative in the country. The Socialist Republic of Vietnam provides a solid foundation for the development of such an initiative, and the current political climate is conducive for launching such an initiative in the near future. At the highest level of the State, there is a clear vision that the development of Open Data (OD) is an international trend that Vietnam cannot avoid and should embrace as soon as possible. A number of elements demonstrate the importance of this vision:

- The efficient organization of the ODRA mission, the setup of a dedicated task force led by APCA, and that included major ministries such as MIC, MoST, MoF, MoPS or MPI and its agency GSO, and the contribution of all ministries and agencies met during the mission shows the ability of the Government to mobilize all its forces on the topic. In terms of possible future roles, a series of ministries seem to have complementary expertise and areas of interventions. OoG, MIC, MoST, MoPS, and MPI/GSO collectively have the mandate and experience required for an OD initiative.

- The recent adoption of an Access to Information law is an essential element for OD and demonstrate the importance of transparency for the Government.

- The launch in January 2018 of the first National open data portal (Itrithuc), together with open data portals launched in the last couple of years by cities such as Danang are first steps toward publishing and making available to the public a larger number of datasets.

Moreover, the meetings during the mission highlighted that lots of data are readily available for publication in many ministries (MoF, MoPS, MPI, MoT, PMA), some data being already in internationally-adopted sector-specific format (e.g. Open Contracting Data Standard in the Public Procurement Agency). The current investment in national databases is also an opportunity and a future important source of datasets. While an official data inventory has not been completed yet, this process is being organized by MIC. Finally, GSO has designed, released and maintains a series of reference data for all government agencies. These reference data are essential for data mashup from different ministries.

- In terms of funding, while a specific budget for an OD initiative has not been identified or reserved yet, the Government of Vietnam has been massively in the development of IT systems and infrastructure from its own budget. Moreover, the Government is open to innovative funding model such as PPP or CSR funding. The case of the Itrithuc portal entirely financed by various actors of the private sector is a good illustration.

All these elements are evidences that The Government of Vietnam could relatively easily put in place a robust national initiative and publish a massive number of datasets. However, the social and economic impact of OD is not only dependent on the release of data, but also require non-governmental actors to exploit these data for developing new services. In that area, the mission also identified some critical elements to support an OD initiative:

- The various meetings with CSOs and businesses show that there is a strong demand for open data, particularly for transparency, for innovation and ICT services (GIS data), for market research and development, and at the sectorial level (environment, health, agriculture, tourism). There is also a nascent data journalism community, interested in accessing to more datasets.

- The innovation ecosystem in very active in Vietnam, with lots of active innovation hubs and incubators and a strong support from MoST, from national to city level. The ICT sector also have players of various sizes, from big international companies (FPT), to big national companies (VNPT, Viettel) to SMEs (e.g. DTT).

- Finally, the high penetration rate and the affordability of mobile and mobile broadband are good for the development of ICT services. In terms of skills, there are a series of public (e.g. VNU) and private (e.g. FPT university) institutions developing courses related to latest technologies such as Data Science.

These elements are essential for the development of Open Data and the emergence of an OD impact from a social and financial perspective. Moreover, the development of an OD initiative could critically contribute to some of the key government priorities:

- **Performance monitoring framework:** The design and setup of an efficient performance monitoring framework requires the collection and exchange of massive set of data between agencies and ministries and the unit in charge of the performance monitoring. The use of open data approaches and technologies is the easiest, quickest and cheapest way to

implement such data sharing approach. In the context of Vietnam, exploring the setup of such framework and the setup of a delivery unit that also needs massive datasets, the implementation of an OD initiative will be a major support to these activities.

- **Vertical bi-directional data flows from national to city level:** There is a growing demand of data exchange between the various administrative levels of Vietnam. Cities like HCMC are designing their plan for smart cities or cities like Can Tho want to develop more advanced disaster prevention plans. They all need data from national agencies and ministries to be more efficient and more innovative. In the same way, national level agencies need also more data from cities, district and province to build their own indicators, and use data for policy making. This bi-directional data flow must be developed. While the national database is one option, it is a long-term objective, while the implementation of an OD initiative can provide results rapidly and support the development of the country at all levels.

- **Innovation and business development in key sectors:** Finally, Vietnam innovation sector is very active. Lots of startups are emerging but they could be more effectively supported through the provision of quality data. In the same way, Vietnam's key sectors such as tourism or agriculture need to do efficient market analysis and need to plan carefully their development to increase their business and support the country development. They need accurate data already collected by the Government but not made available yet. During our consultations, it emerged that industries and actors are limited in their activities due to the lack of this critical data. They use private firms' non-free data whose sources are unknown, and whose terms of use are restrictive. The development of an OD initiative will remove those barriers, make all businesses from all sectors more efficient and lead to the social and economic impact experienced and measured in OD early-adopter countries.

However, despite the vision of the Government and the key elements already in place at the governmental and non-governmental level, there are also some key challenges to resolve to create the conditions for the development of an Open Data ecosystem and for Vietnam to maximize its benefits.

The biggest challenge is on the legal framework. While some publications are already happening on e.g. the new Itrithuc portal, there is currently no legislation to support the publication of these datasets, and to provide any guideline for such activity. All ministries and agencies implement strictly the concept of "Closed by default" where all government data must be protected and should not be disclosed, except if a specific regulation allows the publication. This concept is largely due to the Ordinance on State Secret that gives room for interpretation at various levels of the hierarchy. More generally, almost all ministries and agencies highlighted the absence of clear understanding on what could be published or not. At the same time, there is no policy/regulation on data sharing, publication and reuse of government data. While some regulations require disclosure of some information, there is no mention of format, licenses (terms of use) and process. Finally, there is no regulation on

personal data protection. Some regulations like the statistical law and few others mention the need to protect personal privacy, but this is very vaguely defined. Most ministries and agencies have a weak understanding on which information must be protected and how to protect privacy.

The second main challenge is the capacities at the agency level. The lack of technical expertise on Open Data, and on protection of personal privacy approaches impact the quality of the data published in terms of completeness, timeliness, disaggregation level and format. One of the reasons is that the volume of skilled IT staff, particularly in latest technologies such as data science, is limited in Vietnam. Therefore, they are absorbed by the private sector with high salaries and can't be attracted or retained by the public sector.

This lack of capacities and awareness on Open Data covers also the legal aspect of the publication of datasets. The concept of license (terms of use), and their importance are not well understood by the vast majority of ministries and agencies leading e.g. to the selection of a specific license for Itrithuc portal that does not seem to be the result of an analysis and selection based on a specific rationale. The legal and technical choices have a critical importance for data reusers and have therefore to be carefully evaluated before their adoption.

Open Data and National Databases

Open Data and National databases approved in the Decision 714/QD-TTg can nurture each other. The work currently engaged on the development of national databases is not homogeneous across sectors. Some databases are almost finalized, some are still in the design phase. For national databases that are already completed, the publication of the content of these databases in the form of open data will be very easy and could be automated. This will provide massive datasets to different non-governmental actors and will support the development of the open data ecosystem.

For national databases that are not yet developed, the technologies and approached that are at the heart of the open data could be applied to ease the construction of these databases. Instead of building an integrated fixed database system, from a variety of heterogeneous systems, one option is to publish centrally datasets on a data portal and then mash the various datasets from various systems when needed for specific tasks. Such approach is a far more flexible and agile option and makes the mash up of information across heterogeneous systems easier and quicker.

It is important to note that except these 2 links where existing national databases could feed an open data portal, or in the other way, where open data technologies could be used to build national databases, the two topics are separated. The setup of national databases is about bringing together heterogenous sources of information that are stored on non-compatible systems. The design of such systems is difficult and requires expertise, resources, and time. On the contrary, publication of open datasets focuses on existing data, and only requires the publication of these data (exports from systems where they are stored and treatments such as anonymization). The setup of an open data portal and the publication of datasets is therefore an easy short-term process compared to the adopted national database approach.

The third main challenge is the leadership. During the discussion, the vast majority of the people we met are not aware of the specificities of Open Data, the difference between Open Data, and e-government framework and services, the specific activities required and the specific opportunities. It will be essential to raise awareness and resolve this challenge before any other elements, to ensure that the Government adopts an OD-specific roadmap that would require different efforts and budget. It is also important to understand that this effort will provide results and impact on a different timescale if compared to an e-government framework.

The fourth main challenge is related to the cooperation between agencies at the national but also subnational level. Despite the need, there is almost non-existent data sharing internally between agencies, and vertically from national level to province, district and city level. This impacts efficiency. Both Hanoi and HCM representatives highlighted the fact that this situation is getting worse with the use of digital platform where the information is now centralized at the government level, without access from the city. One example cited by both cities is the business registries, where cities can't access the full records of the businesses registering in their respective town as the registration is done online and managed by the State.

From the non-governmental actors' perspectives, a series of challenges were also highlighted.

Concerning data publication, while there is already quite many information published by various agencies and ministries, the vast majority of non-governmental actors have great difficulty to search and find this information, scattered across web sites in various formats.

Another critical aspect is the interaction between governmental and non-governmental actors. The dialog between them seems weak and inefficient. Many actors highlighted the need for personal networks to access data from agencies. Without any contact, the access to information takes very long time and is very inefficient except for administrative procedures that are regulated. This lack of interaction and communication does not create the conditions for mutual understanding and does not provide a framework for government agencies to identify high value datasets for the different reusers. This eventually results in the publication of low quality, low value datasets, that are of no interest to reusers, and therefore that make no impact.

In order to address the identified challenges, this study proposes an action plan which focuses on three main areas: the **legal framework, the implementation plan, and the support to non-state actors.**

Concerning **the legal framework,** the first step will be to setup the initiative with an open data task force (ODTF) and announcing it publicly. The ODTF should be placed under the authority of OoG, hosted by APCA and led by a CEO supported by a CTO for all technical matters. The ODTF should involve all the ministries that were in the ODRA/DGRA task force. Its first work item, after defining a fine-grained budget and a detailed roadmap, should be the development of an open data legislation to provide a solid legal foundation for publishing data online. This legislation should cover all key dimensions of OD such as licenses, formats, standards and

maturity level of datasets, the requirements for metadata, the monitoring and evaluation plan, the principle of open-by-default or the no-cost aspect of electronic data. The design of this legislation must be linked the revision of other laws, in particular the finance law with regards to fees and taxation, and the Ordinance of the protection of State Secrets to provide a very previse lists of data that must be protected, without any possible individual interpretation. On the longer term, the ODTF should be institutionalized within the government, and a Chief Information Officer/Chief Data Officer should be created at the national level first and then in each ministry. In terms of legislation, the Government should develop a dedicated legislation on personal data protection to clarify and provide legal foundations for the management of personal data and the publication process.

Concerning **the implementation plan,** the first step of the ODTF and its CTO should be on driving the upgrade of the Itrithuc portal to add a series of functionalities to support an efficient implementation of the OD strategy. These new functionalities include the clear separation of government datasets with non-governmental datasets, the setup of formal request and feedback modules, and the setup of a series of watchdogs to ensure that publications follows OD legislation (format, metadata, timeliness, etc.). The OD portal should be aligned (e.g. with regards to licenses) with the choices adopted for the OD legislation. Then the ODTF should select a first series of agencies to join the OD initiative and support them in the implementation of the OD approach. The ODTF should put in place a technical team, that can have different forms such as a fellowship program or a core set of people moving from agency to agency and develop a series of manuals to support this process. The work within a given agency will be articulated around:

- The development of capacities within the agency at three levels: 1) high-level officials (PS, DG levels); 2) future access-to-information officers; 3) data managers and IT people.

- The development of a data inventory and the identification of datasets that are interesting for other agencies and non-governmental actors.

- The cleaning, curation and publication of these datasets on the Itrithuc OD portal. In a second phase, automatic publication mechanisms should be put in place to reduce the effort.

On the longer term, the initiative should then be scaled-up to all agencies and to the subnational levels.

Concerning **non-state actors,** the ODTF should organize first a communication campaign to promote OD and a series of events ("OpenDatathons") to promote the reuse of datasets. These events could be thematically focused and should look at both innovative services, and government-internal use cases (e.g. performance dashboards). This will create interest and excitement internally in the government and among the non-governmental actors. In the same way, MoST should focus some of its activities and funding (e.g. innovation events, tax incentives, etc.) towards OD startups to promote reuse of Open Government Data. On the longer term, the

creation of an Open Data will support and coordinate OD development within the society. In the same way, data science should be developed at universities and the number of students with such profiles increased. Future civil servants should also be made aware of the concept and principles of Open Data via a specific module added on this topic within the National Academy for Public Administration curriculum.

With the implementation of this action plan, it is likely that Vietnam will not only progress rapidly on international indexes related to Open Data, but more importantly will be able to experience measurable social and economic impact that is observed in other countries engaged in such initiatives.

Methodology

This "Open Data Readiness Assessment" (ODRA) was prepared for the Government of the Socialist Republic of Vietnam (GSRV). The purpose of this assessment is to assist the GRSV in identifying what actions it could consider to establish a National Open Data Initiative.

In the context of Vietnam, this assessment assumes greater importance and looks beyond launching an Open portal for publishing data and focuses more on the policy landscape. A National Open Data Initiative involves addressing both the supply and the reuse of open data, as well as other aspects such as skills' development, financing for the government's open data agenda and targeted innovation financing linked to open data.

The World Bank (WB) Open Data Readiness Assessment Framework[196] uses an "ecosystem" approach to open data, meaning it is designed to look at the larger environment for open data: "supply" side issues including the policy/legal framework, data existing within government and infrastructure (including standards) as well as "demand" side issues such as citizen engagement mechanisms and existing demand for government data among user communities (such as developers, the media and government agencies).

This Assessment evaluates readiness based on eight dimensions considered essential for an Open Data Initiative that builds a sustainable open data ecosystem. Its recommendations assume that an Open Data Initiative will address various aspects of an open data ecosystem. The Readiness Assessment is intended to be action-oriented. For each dimension, it proposes a set of actions that can form the basis of an Open Data Action Plan. The recommendations and actions proposed are based on global best practices while also incorporating the needs and experiences of the GSRV.

Within each dimension, the assessment considers a set of primary questions, and for each, notes evidence that favors or disfavors readiness. The evaluation of each dimension and primary question is color-coded: **Green** (G) means there is clear evidence of readiness, **Yellow** (Y) means that evidence of readiness is less clear, Red (R) means there is evidence for absence of readiness, **Grey** (O) means insufficient information to assess readiness. When addressing a question, evidence of readiness has a "+" sign. Evidence against readiness has a "-" sign. Evidence that has mixed implications or neither favors nor weighs against readiness has an "o" sign. Not all evidence is weighed equally when determining the overall color indicator for a given primary question. Certain factors may weigh more heavily when deciding readiness status.

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196   This ODRA is based on the World Bank Methodology version 3.1 http://opendatatoolkit.worldbank.org/docs/odra/odra_v3.1_methodology-en.pdf

It is important to note that the selection of a specific color for a specific dimension is always a difficult task. Given the specificities of the countries, and the fact that the legal environment as well as the organization of the government and the importance of technology are changing rapidly, colors have been used to reflect not only the state of a dimension/question but also to reflect the possible evolution in the near future. For instance, a red color means that element is assessed as unlikely to change in the near future, and there are no ongoing or scheduled activities likely to have a positive impact on the subject.

Finally, it is important to note that an ODRA is a diagnostic and planning tool, it is not a measurement tool. This tool is intended to provide diagnostics and recommendations for action based on existing good practice elsewhere, but it is not a prescription for Open Data, nor is it a formal evaluation exercise. The output of any diagnostic, even following the guidance in this tool, needs to be carefully and critically considered in the context of the particular circumstances in which it has been made.

Using the tool will not guarantee a successful and sustainable Open Data program on its own; implementation is crucial to ensure success. The purpose of the tool is to provide a plan for action for an Open Data program, as well as initiating a robust and consultative dialogue among relevant stakeholders. In that sense, use of this tool is the beginning of a process and not the end or result of a process. This tool is a 'living' document and will be subject to continuous updating and revision based on experience from actual practice. In addition, other means of assessing readiness for Open Data are available, and this tool is not necessarily the only, or always the most appropriate, in all particular circumstances.

1. Senior Leadership

1.1 Political Leadership: Is there visible political leadership for open data/ open government/ access to information? Importance: Very High YELLOW

- There is no clear evidence of any declaration related to Open Data. The current draft Resolution on e-Government includes this kind of declaration.

- There isn't a clear understanding among the majority of the people and organizations met during the field mission, about the concepts of Open Data, and its benefits.

+ There is a clear understanding at the high political level that Open Data is an international trend, and an opportunity for the country. It is therefore essential for SRV to catch up on this trend.

+ At the city level, there are open data initiatives:

   o Danang has its own open data portal[197] Of the key tasks of building smart city in the HCM City is Building a Shared Data Warehouse and Developing an Open Data Ecosystem for the City.

+ The SRV is deeply involved in anti-corruption activities. There is a national body (Government Inspectorate Anti-Corruption Bureau), a national strategy (National Strategy for Preventing and Combating Corruption Towards 2020[198]) and an Anti-Corruption law since 2005[199]

+ The SRV was part of the first pilot countries in the Construction Sector Transparency Initiative (CoST[200])

- Work on CoST is suspended since 2016 due to lack of international funding[201]

+ The SRV is part of the Open Data for Resilience initiative[202]

+ The GSRV considers ICT has a strong opportunity for social and economic development of the country. This is highlighted in many official speeches:

   o Statement by Prime Minister Nguyen Xuan Phuc at Vietnam ICT Summit 2016 (24/9/2016): *"The whole society need to raise awareness about the digital revolution*

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197   http://opendata.danang.gov.vn/
198   http://www.ngocentre.org.vn/webfm_send/20
199   http://www.oecd.org/site/adboecdanti-corruptioninitiative/46817414.pdf
200   http://www.constructiontransparency.org/vietnam
201   https://www.baomoi.com/bo-xay-dung-bao-cao-ve-viec-tham-gia-chuong-trinh-cost-quoc-te/c/22902188.epi
202   https://opendri.org/project/vietnam/

and at the same time drastically accelerate the application of IT in order to raise the efficiency, effectiveness of activities. This must be considered a top priority task, the highest responsibility of the heads of state agencies and organizations from the central to local level"[203]

o   Statement by Standing Deputy Prime Minister Truong Hoa Binh at the online conference of the Ministry of Home Affairs hold on 26/12/2016: *"Strengthening the application of information technology to create smart solutions that are effective and groundbreaking, helping the Government and the Prime Minister to build a democratic, modern, professional, efficient and effective administration"*

+   The launch of the Itrithuc open data portal[204], under the authority of the Ministry of Science and technology (MoST), is a first step towards a wider national open data initiative

1.2 Political Structure: To what extent is there an established political leadership and governance model for policy and implementation of programs across multiple institutions or across government as a whole? Importance: High YELLOW

+   The Government set up the National Committee of e-Government. Accordingly, ministries and provinces has/will set up its own steering board of e-Government development.

+   The Office of the Government[205] (OoG) oversees horizontal/cross-agency implementation. Its functions[206] include:

o   *"To assume the prime responsibility for organizing the deployment of e-government serving the direction and administration of the Government and the Prime Minister; To urge the implementation and summing up the situation and results of building e-Government of ministries, sectors and localities and report to the Government and the Prime Minister."*

o   *"To manage and operate the National Public Service Portal to integrate all online public services of ministries, sectors and localities; To submit to the Prime Minister for promulgating a list of public services of grades 3 and 4 that ministries, sectors and localities provide annually;"*

o   *"To manage and operate information technology systems serving the direction and administration of the Government and the Prime Minister; To assume the prime responsibility for linking, coordinating, integrating and sharing information between the Government Office and ministries, sectors and localities serving the direction and administration of the Government and the Prime Minister in line with legal documents, standards, technical regulations and architecture framework of*

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203   https://vtv.vn/cong-nghe

204   https://dulieu.itrithuc.vn/

205   http://vpcp.chinhphu.vn/

206   Decree No. 150/2016/ND-CP dated November 11th, 2016

e-Government in Vietnam"

+ Under the OoG, there are 3 units whose missions and functions are related to OD implementation:

o The Government Portal whose functions[207] include:

- *"To assume the prime responsibility and coordinate with concerned units in setting up, managing and operating the National Public Service Portal to integrate all online services of ministries, sectors and localities."*

- *"To assume the prime responsibility for interconnecting, coordinating, integrating and sharing information between the Government Office and ministries, sectors and localities serving the direction and administration of the Government and the Prime Minister"*

* *"To assume the prime responsibility and coordinate with concerned units in performing the functions and tasks of the unit in charge of information technology applications of the Government Office"*

o The Administrative Procedure Control Agency (APCA) oversees the Public Administration Reform program (PAR aka Project 30[208]). Its functions include

- *"To assume the prime responsibility and coordinate with concerned units in examining projects, draft legal documents, programs, plans, reports and other regular work on state administrative reform;"*

- *"To assume the prime responsibility and coordinate with concerned units in organizing and guiding the implementation of the one-stop shop mechanism in processing administrative procedures at state administrative agencies"*

- *"To assume the prime responsibility and coordinate with the Government Portal, the Information Center in formulating, managing and operating the contents of the administrative and procedure control and evaluation system; National databases on administrative procedures; Information system to receive, process feedback and recommendations on administrative regulations; Website of APCA"*

o The Information Center whose functions include:

- *"To manage, supervise and ensure the safety of the data center at the Government Office; To manage and operate the internal portal system and other internal information systems assigned by the Minister, Head of the Government Office"*

- *"To act as a focal point for sending and receiving electronic data to members of the government, ministries, sectors and localities upon request; to update the data on the website for the government's meeting; to manage and archive*

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207 Decision No. 1215/QD-VPCP of December 15th, 2016

208 https://www.brookings.edu/research/project-30-a-revolution-in-vietnamese-governance/

electronic documents and audio files of meetings and work of governmental leaders at Government offices and on-line meetings of the Government Office."

- *"To assume the prime responsibility and coordinate with concerned units in elaborating plans and estimating funds for projects on procurement of solutions and equipment to ensure safety and security for the information technology system of the Government Office; To coordinate with the Government Portal in elaborating plans (short-term and medium-term) for the development of information technology applications at the Government Office".*

The respective role of these units is clearly defined and will be important in an OD initiative for legal aspect (APCA), technical implementation (Information Center, Government Portal), and for data publication (APCA).

+   The Ministry of Information and Communication (MIC) will also have an important role in a future OD initiative. Its functions[209] include

o   *"To guide, organize and inspect the implementation of programs, plans, projects, policies and regulations on the application of information technology; Regulations on investment management, evaluation of investment efficiency in the application of information technology using state capital; support enterprises and communities to apply information technology"*

o   *"To build an information system linking and facilitating the convenient access to national databases; To guide, inspect and evaluate the observance of law provisions related to the national databases."*

o   *"Promulgating or submitting to competent authorities for promulgation and organizing the implementation of regulations on interconnection, integration and sharing of information and data among ministries, sectors and localities; To announce according to its competence or submit to the Prime Minister for promulgation a list of shared information and data"*

o   *"To manage the national program on IT applications in operation of State agencies; To assume the prime responsibility for implementing the information technology applications in operation of State agencies under the State administrative reform master plan"*

o   *"To organize the construction, management and operation of information technology infrastructures, Vietnam's e-Government architecture framework and shared data and information systems assigned by the Government or the Prime Minister."*

o   *"To guide localities to deploy information technology applications for developing and providing intelligent city services"*

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209   Decree No. 17/2017/NĐ-CP dated February 17th, 2017

+ The Ministry of Science and Technology (MoST) is in charge of the development of innovation and startup program. It is also currently overseeing the development of the newly launched Itrithuc[210] open data portal

- A big part of the work seems to be developed in silos, and e.g. only a few ministries and agencies are aware of the Itrithuc portal. Open Data is not yet a topic on which there is coordination, at the exception of the execution of the ODRA.

+ The organization of the field mission, under the auspice of the Office of the Government (OoG) and APCA, the constitution of a cross-governmental task force, and the attendance at the launch workshop, demonstrates the coordination power and the leadership of OoG and APCA

- The task force setup for the ODRA & DGRA has a short-term mandate and will be dissolved at the end of this activity.

- There seem to be a proliferation of task forces and steering committees for lots of projects and initiatives across the government. Such setup, when there isn't a strong leadership, does not seem to perform well.

1.3 Existing Activities: What existing political activities or plans are relevant to open data? Importance: Medium YELLOW/GREEN

- There is no clear policy directive for a national open data initiative.

- There is no official plan for OD or Open Government

+ Draft E-Government Resolution includes the content of "Organization of opening data and providing open data of the Government"

+ E-government, smart cities and industry 4.0 is an important focus of the GSRV

   o On October 14th, 2015, the Vietnam Government issued the Resolution No. 36a/ NQ-CP on e-Government strategy

   o On October 26th, 2015, Vietnam's prime minister signed Decision 1819/QĐ-TTg approving the national program on IT applications in operation of State agencies for the period 2016-2020 with the main objective of developing e-government in the country. If includes the objective to "implement smart city in at least 3 localities".

   o On December 1th, 2016, the Government office issued document 10384/VPCP-KGVX notifying the Prime Minister's direction on the implementation of smart cities

   o A number of cities have launched activities on smart city:

      • On January 15th, 2015 Binh Duong province authorities had signed a deal

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210 https://dulieu.itrithuc.vn/

to cooperate with the government of Eindhoven City, the Netherlands to develop smart city.

- On March 2016, Da Nang city has decided to set up a steering committee for developing smarter city.

- On September 29th, 2016 VNPT Telecom operator and the People's Committee of Kien Giang province launched project to build the smart city in Phu Quoc island. On February 2017, the implementation of the 1st phase of Phu Quoc smart city was completed. The implementation of the 2nd phase has started.

- On September 29th, 2016 VNPT Telecom operator and the People's Committee of Ho Chi Minh City signed an agreement on ICT framework consultancy cooperation to build the smart city in 2017-2025 with a vision towards 2030

- On November 23, 2017, the People Committee of Ho Chi Minh City approved the project of establishing smart city period 2017-2020, vision to 2025. Smart city development plan focuses on key tasks as follow: Establishing shared data warehouses and developing an open data ecosystem[211], to build a simulation center for forecasting socio-economic development, construction of smart city operating centers, establishment of information security center..

- Viettel Telecom operator has signed a cooperation agreement to build smart city with 9 locals including Phu Tho, Thai Binh, Thai Nguyen, Phu Yen, Hai Duong, Hue, Binh Phuoc, Hung Yen and Da Nang.

- VNPT Telecom operator has signed a cooperation agreement to build smart city with several locals including Ho Chi Minh city, Binh Duong, Phu Quoc, Da Lat, My Tho, Buon Ma Thuot, Lao Cai,

- A Memorandum of Understanding (MOU) on the establishment of e-government, smart city between Hanoi and Microsoft Vietnam has been signed on March 14th, 2017.

+   The development of the information society is also highlighted in many strategies:

o   in the resolution No 36-NQ/TW of the Communist Party on enhancing IT application and development IT to meet sustainable development and international integration: *"IT is one of the important driving forces of the development of the knowledge economy and the information society, enhancing the national competitiveness in the process of international integration."*

o   in the Strategy for the development of information and communication technology in Vietnam by 2010 and orientation to 2020: *"Information and communication technology is the most important tool for achieving the millennium goals, forming the*

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211   https://tuoitrenews.vn/news/society/20171017/ho-chi-minh-city-hopes-to-deliver-smart-city-benefits-to-resi-dents/42083.html

information society, shortening the process of industrialization and modernization of the country."

+ Innovation and the development of startups is a strategic theme for GSRV. It is managed by MoST.

+ The Public Procurement Agency (PPA) is in the process of adopting the Open Contracting Data Standards (OCDS[212]). This work is part of a project[213] with the WB Procurement Statistics Team and Development Gateway.

+ At the city/subnational level, some cities, e.g. Can Tho, are designing spatial data infrastructure (SDI) strategy to better use data for disaster management in the Mekong delta

1.4 Wider Context: How does the wider political context in the country help or hinder open data? Importance: High YELLOW/GREEN

+ Fighting corruption is an essential element of the PAR and an area where OD can efficiently contribute to

+ The Vietnam 2035 Toward Prosperity, Creativity, Equity, and Democracy report[214] puts innovation at the center of the economic prosperity, and focuses on environmental sustainability.

+ The PAR and the political will to monitor and improve delivery of public services is a good vehicle to promote open data.

+ There are specific on-ongoing investigations to setup a delivery unit and a performance monitoring framework within the Government. These elements would require strong data sharing processes between agencies, and these processes could be efficiently supported by OD.

+ The development of the digital economy (e.g. smart cities) and industry 4.0 is another good vehicle to promote open data

+ The implementation of an ambitious e-government framework is a good vehicle to promote open data

+ Some specific projects are also candidates for contributing to a future Open Data Initiative (ODI). This includes the project on Improving Efficiency and Transparency in Land Administration Services[215] or the project for development of national biodiversity database system in the socialist republic of Viet Nam[216]. In general, the development of

212   https://www.open-contracting.org/data-standard

213   http://www.developmentgateway.org/projects/ocvietnam

214   https://openknowledge.worldbank.org/handle/10986/23724

215   http://www.worldbank.org/en/news/press-release/2016/07/05/vietnam-improving-efficiency-and-transparency-in-land-administration-services

216   http://vea.gov.vn/en/news/gallery/Pages/The-project-for-development-of-national-biodiversity-database-system-in-the-socialist-republic-of-Viet-Nam.aspx

national databases can support, ease and feed a future national open data initiative[217].

1.5 What is the country's position in relation to the Open Government Partnership? RED

- The SRV has not joined the Open Government Partnership and there are currently no plans in the pipeline to do so.

- No concrete commitments or National Action Plan exists that may indicate concrete commitments to open data.

- The SRV is not eligible to OGP[218]

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217   See the box on the relation between national databases and open data

218   https://docs.google.com/spreadsheets/d/1kRgVWEjPpqlpD8zBXhNA4Ih3wIWwL0JH9aWTuZn8J2E/edit#gid=869039115

Assessment Of Senior Leadership

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Political Leadership	Very High	YELLOW	Higher political level understands the development of OD all over the World and there is a clear political will to catch-up on the international trend. The emergence of some elements such as cities OD portals or Itrithuc portal demonstrates this will. However, core principles and benefit of open data has not been aware fully, consistently and equally across government agencies.
Political Structure	High	YELLOW	Ministries and agencies seem to be more used to work in silos, and the proliferation of inefficient task forces and steering committees demonstrates this issue. However, in the case of OD and DG, OoG and its Chairman is a clear leader and the way the mission was organized demonstrates its leadership. The task force set for the mission was very efficient and brought together all relevant ministries.
Existing Activities	Medium	YELLOW/GREEN	The GSRV is fully aware of the potential of ICT for social and economic development. Lots of development are ongoing related to e-government, and smart cities. While uncoordinated, a series of initiatives such as Itrithuc portal, national databases or e-procurement system, are already emerging and could provide a solid foundation for a wider national OD initiative. However, at the moment, these activities are at their infancy.
Wider Context	High	YELLOW/GREEN	The country priorities fighting corruption, developing the information society and innovation, and improving administration efficiency could all be well supported by an Open Data Initiative. The Initiative also supports the investigation around the setup of a delivery unit and performance dashboards as well.
Open Government Partnership	Medium	RED	The SRV is not eligible to OGP
OVERALL	Very High	YELLOW	The Government provides a strong leadership with a clear vision for the country with regards to the development of the Digital Economy in general. However, it is still lacking of awareness and understanding of the specificities of OD. Initiatives of OD are still at the initial stage of development.

2. Policy / Legal Framework [219]

Key Laws:

• Access to Information Law No 104/2016/QH13 (April 2016)[220]

• Internet Law: Decree 72[221]

• Law No. 86/2015/QH13 on Network Information Security[222]

• Laws about electronic administration:

    o Resolution No. 36a/NQ-CP on e-government[223]

• Law No. 24/2018/QH14 on Cybersecurity (June 2018)

• Ordinance on State Secrets Protection No. 30/2000/PL-UBTVQH10 of December 28, 2000[224]

    o Decree No. 33/2002/ND-CP[225] that provides detailed guidelines for implementing the Ordinance 30/2000/PL-UBTVQH10[226]

    o Circular No. 29/2013/TT-BCA[227] dated 10 May 2013 of the Ministry of Public Security providing for the list of State secrets at Secret level in the field of natural resources and environment

    o Decree No. 45/2015/ND-CP on survey and mapping activities

    o Decree No. 73/2017/ND-CP dated 14 June 2017 of the Government on collecting, managing, exploiting and utilizing natural resources and environmental data

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219 The preliminary analysis and recommendations in this Assessment are based on information and opinions collected from interviews undertaken and materials provided by the government and other local stakeholders during the course of this Assessment. It is not based on detailed, legal due diligence and does not constitute legal advice. Accordingly, no inference should be drawn as to the completeness, adequacy, accuracy or suitability of the underlying assessment, or Recommendations, or any actions that might be undertaken resulting therefrom, regarding the enabling policy, legal or regulatory framework for Open Data in the country.

220 http://vbpl.vn/TW/Pages/vbpqen-toanvan.aspx?ItemID=11040

221 https://vnnic.vn/sites/default/files/vanban/Decree%20No72-2013-ND-CP.PDF

222 http://english.mic.gov.vn/Upload/VanBan/Law-on-Network-Information-Security-16-05-30.pdf

223 http://isos.gov.vn/News_Detail/tabid/179/ArticleId/1239/language/en-US/Governmental-Resolution-on-e-Government.aspx

224 http://www.moj.gov.vn/vbpq/en/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=4

225 https://vanbanphapluat.co/decree-of-government-no-33-2002-nd-cp-of-march-28-2002-detailing-the-implementation-of-the-ordinance-on-the-protection-of-state-secrets

226 https://luatminhkhue.vn/en/decree/decree-no-33-2002-nd-cp-dated-march-28--2002-of-the-government-detailing-the-implementation-of-the-ordinance-on-the-protection-of-state-secrets.aspx

227 https://thuvienphapluat.vn/van-ban/Bo-may-hanh-chinh/Thong-tu-29-2013-TT-BCA-Danh-muc-bi-mat-Nha-nuoc-do-mat-linh-vuc-tai-nguyen-187140.aspx

- Statistics Law Nº 89/2015/QH13[228]

- Law on Archives No. 10/2011/L-CTN of November 25, 2011[229]

- Press Law No. 03/2016/L-CTN of April 19, 2016[230]

- Law on information technology No. 67/2006/QH11[231]

  o Decree No. 64/2007/ND-CP[232] (April 10th, 2007), on information technology application in state agencies

What is the legal and policy framework for the protection of personal privacy? (Importance: Very High) RED

- No legislation related to protection of personal privacy is identified

+ The Statistics Law Nº 89/2015/QH13 mentions the protection of confidentiality as part of the duty of the agencies organizing surveys (article 35.1). The article 57.1.a mentions that confidentiality applies when "the information is associated with a specific name and address of each organization and individual unless that organization and individual permit the publication"

+ Article 21 of the law on information technology No. 67/2006/QH11 on Collection, processing and use of online personal data mentions that:

  o Organizations and individuals collecting, processing and using personal information of other persons must obtain consent of persons whose data is being collected, processed, and used, unless regulated otherwise by law

  o The Organizations and individuals collecting, processing, and using personal data of others have the following responsibilities:

    - Inform the other party of the form, scope, location, and purpose of such actions

    - Use such data for purposes as stated and only store such data in a limited time frame as regulated by law or by consent

    - To process without delay when receiving requests to verify, correct, or delete data as requested by Clause 1 Article 22

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228   http://www.gso.gov.vn/Default_en.aspx?tabid=502&catecode=2

229   http://hethongphapluatvietnam.com/order-no-10-2011-l-ctn-of-november-25-2011-on-the-promulgation-of-the-law-on-archives.html

230   http://hethongphapluatvietnam.com/order-no-03-2016-l-ctn-dated-april-19-2016-on-the-promulgation-the-press-law.html

231   http://vbpl.vn/TW/Pages/vbpq-toanvan.aspx?ItemID=15066

232   https://vanbanphapluat.co/decree-no-64-2007-nd-cp-of-april-10-2007-on-information-technology-application-in-state-agencies-operations

+   Article 22 of the law on information technology No. 67/2006/QH11 is about Storing and Supplying online personal data and mentions:

o   Individuals can request the party storing their online personal data to verify, correct, or delete such data.

o   Online personal data is not to be provided to third party unless regulated otherwise by law or with consent of the party involved.

o   Individuals can seek damage compensation in case of violation.

+   Article 16, 17, 18, 19 and 20 of law No. 86/2015/QH13 on Network Information Security is dedicated to personal information protection in network, and what organizations managing personal information can and cannot do.

-     The vast majority of interviewees are not aware of the core principles of personal data protection and anonymization. They have a very fuzzy understanding of the concept and no real understanding on existing techniques to anonymize data. The current practice seems to be that the presence of personal data in any piece of information prevents its publication.

-     We have not identified any agencies with existing technical capacities in data anonymization.

2.2   What rights of access to information exist? (Importance: Very High) YELLOW

+   The Article 25 of the 2013 constitution[233] stipulates: "Citizens have the right to freedom of speech and freedom of the press, and have the right of access to information, the right to assembly, the right to association, and the right to demonstrate. The exercise of those rights shall be prescribed by law."

+   The Law No 104/2016/QH13 (April 2016) on Access to Information was passed in April 2016 and will be effective 1st June 2018

-     The Law on Access to information allows the access to information at a certain level[234]. It is ranked 90th among 111 countries with such law for RTI Ranking[235]

-     There is no mention of raw data

-     There is no redress process (independent entity to take complain)

-     There are no requirements for central publication or for digital publication

-     There is no mention of information reuse

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233   http://vietnamlawmagazine.vn/the-2013-constitution-of-the-socialist-republic-of-vietnam-4847.html

234   Centre for Law and Democracy analysis: https://towardstransparency.vn/wp-content/uploads/2016/09/Vietnam_RTI-analysis_EN_FINAL.xls

235   http://www.rti-rating.org/view_country/?country_name=Vietnam

- As the law in not yet in place, we were not able to evaluate its implementation

2.3 What is the legal and policy framework for data security, data archiving and digital preservation? (Importance: High) YELLOW/GREEN

\+ The Law on Archives No. 10/2011/L-CTN of November 25, 2011 defines the content and the process for archiving material and transferring them to the Institutional Archives

\+ The Law on Archives also cover electronic archives

\- However, the Law mentions a future specific legislation for the requirements on e-archive (Article 13.4: "The Government shall detail the management of e-archival materials") which is not yet in place

\+ The MIC oversees information security

\+ There is a series of legislations for data security and cybersecurity:

o Law No. 86/2015/QH13 on Cyber Information security define classification of systems, protection measures, and requirements for protection, as well as measure to take in case of breaches. This law is complemented by a series of decrees:

- Decree No. 85/2016/ND-CP dated on July 01, 2016 of Government on the Security of information systems by classification;

- Decree No. 142/2016/ND-CP dated on December 14, 2016 of Government on Prevention of online information conflicts;

- Circular No. 20/2017/TT-BTTTT dated on September 12, 2017 of Ministry of Information and Communications on Regulations on coordinating and responding to nationwide information security incidents;

- Decision No. 05/2017/QD-TTg dated on March 16, 2017 of Prime Minister on Providing emergency response plans to ensure national cyberinformation security.

\+ The article 6 of the Decree No. 64/2007/ND-CP requires a series of measures for digital preservation of information. Its article 41 introduces the principles of ensuring information safety, including backup procedures and alike

\+ The article 13 of the circular No. 26/2009/TT-BTTTT (31 July 2009) about "Providing for the provision of information and assurance of convenient access to websites of state agencies" requires a detailed procedure for data protection and data backup.

\+ On 12 June 2018, the Law on Cybersecurity was officially adopted at the 5th Session of the XIV National Assembly and will come into effect on 1 January 2019 (not in time to be a formal part of the assessment).

2.4   What is the policy on the ownership and licensing of government data? (Importance: Very High) RED

- Article 4 and 25 of Law on Property Right 2009 mentioned data ownership and licensing in general. However, no specific regulation is identified related to ownership and licensing of government data.

- There is no license, not even copyright on any of the data published by the government (e.g. some of the national database)

- Concerning the case of the Danang Open Data portal, the majority of datasets has no license

+ One set of datasets on the Danang Open Data portal have a CC-BY license

+ Itrithuc portal mentions a series of open licenses

+ Most documents on Itrithuc are under a Creative Common Non-Commercial license (CC-by-nc 2.0[236])

- None of the people we interviewed, including the National Agency for Sciences and Technology Information (NASATI) who is in charge of Itrithuc portal, are aware of the concept of licenses for data, or are aware of the rationale of the choices made for Itrithuc

2.5   To what extent is government data sold by agencies? (Importance: High) YELLOW

- The department of survey and Mapping sells data[237]. This is regulated by Circular No. 49/2013/TT-BTC providing guidelines on schemes of collecting, paying, managing and spending the charges revenue on exploiting and utilizing survey and mapping data.

- Hydro-Meteorological data is provided with fee by the National Centre for Hydro-Meteorological Forecasting, according to Circular No. 197/2016/TT-BTC dated 8 November 2016 regulating fee, collection mechanism and spending of revenue from selling information and data on hydrology and meteorology. In the same way, Circular No. 70/2012/TT-BTC providing guidelines on schemes of collecting, paying, managing and spending the charges revenue on exploiting and utilizing the national remote sensing data

- The MoF keeps a list of data that can be charged. This list can be amended and must be approved by a dedicated commission at the National Assembly. The fees themselves are discussed between the agency and MoF. In the same way, the revenue sharing between state budget and agency is discussed between agency and MoF and then a circular is issued

+ MoF does not track specific indicators to measure data revenue, but qualitatively it seems low

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236   https://creativecommons.org/licenses/by-nc/2.0/

237   http://bandovn.vn/en

- A number of agencies and ministries sells data. E.g. MPI provides part of the business registry for free (7 fields over 200) and part is sold, without any reuse terms.

- When there is in place a legislation to sell data, the selling is for both governmental and non-governmental actors

2.6   What other policies/laws exist that may have significant impact on open data?   (Importance: High) YELLOW/RED

- The Ordinance on State Secrets Protection No. 30/2000/PL-UBTVQH10 Protection makes information secret by default. All information is covered by this law. The release of information is subject to Ministry of Public Security (MPS) approval.

- The decree No 33/2002/ND-CP details the implementation of the Ordinance on State Secret protection. In particular:

  o   Each ministry defines what are the information covered by the law and categorize the information. The list can be amended every year

  o   The list of State secrets is not necessarily published and is decided on case by case

- The ordinance on State Secrets, while being general, is also complemented by a series of specific legislation for each type of information. For example, Circular No. 29/2013/TT-BCA classifies as state secrets:

  o   National original topographic data system including: original topographic datum, original astronomic datum, original satellite datum, original absolute gravity value, original elevation point value, original depth point value;

  o   Aerial images include digital aerial photos and scanned aerial photos with coordinates of the photos' center point having the site coverage of greater than 200km2;

  o   Survey and Mapping data and materials of areas, targets and objects which are classified as secrets protection.

  This legislation will likely have a severe impact on implementing an OD initiative.

+ The Government Decree No. 43/2011/ND-CP dated June 13, 2011 request the proactive disclosure of online information and public services on websites or web portals of state agencies. It includes:

  o   Introductory information;

  o   News and events;

  o   Information about the key members of the agency (profile, name, contact information, etc.);

- o   Information about guiding laws, regimes and policies on the domains under the agency's management;

- o   Development strategies, orientations, master plans and sectorial strategies and plans, covering at least the following information:

    - Investment incentives and opportunities, projects calling for investment;

    - Construction and urban planning; land use master plans and plans;

    - Master plans and plans on natural resource exploitation;

    - Master plans on waste collection, recycling and treatment, lists and information on sources and types of waste likely harmful to human health and the environment; areas with seriously and extremely seriously polluting and degrading environment and areas at risk of environmental incidents;

- o   Legal documents and related administrative management documents;

- o   Information on investment projects and public procurement;

- o   Lists of upcoming, ongoing and completed projects;

- o   Project information such as its name, principal objectives, professional domain type, implementation time, cost, funding form, donors and status;

- o   Public Consultation;

- o   Online public services

Assessment of Policy/Legal Framework

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Legal & Policy Framework for privacy protection	Very High	RED	There is no legislation or policy framework related to personal data and privacy protection. These concepts are loosely mentioned in various legislations. Most of agencies and ministries are unaware of the principles and the approaches to privacy protection.
Right to Information Act	Very High	YELLOW	While the Law of access to information passed in April 2016 is an improvement and provides new rights to citizens, it is considered very restrictive by international standards. Given that the new law will be effective on 1st June 2018, it is not possible to evaluate the efficiency of its implementation yet.
Policy framework for data security, data archiving and digital preservation	High	YELLOW/GREEN	MIC has issued a series of recommendations and policies for data security, data archiving and digital preservation. In the same way, the State Records Management and Archives Department of Vietnam, part of MoHA is working on a new regulation of the archiving of electronic documents but this is not yet in place.
Policy on the ownership and licensing of government data	Very High	RED	There is no legislation related to ownership and licensing of government data. There is no license attached to any data published on Web sites. Most if not all interviewees are unaware of the concept of license and associated publication on a web site with a CC0 or similar license. The Itrithuc portal use almost exclusively a CC-by-NC license, but no one seems to have make this choice deliberately.
Selling of government data	High	YELLOW	There is a complete process and regulation in place for the selling of data by the government. Some agencies and ministries are using it like MoNRE for geospatial data, but such selling seems to bring very limited revenue. It is important to note that regulation for selling data applies to both governmental and non-governmental actors, creating barriers for internal sharing.

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Other policies/ laws impacting Open data	High	**YELLOW/RED**	The Ordinance on State secret protection is the major piece of regulation impacting OD. The scope of the ordinance is wide and gives a large place to individual interpretation providing a strong rational for non—publication of datasets
OVERALL	High	**YELLOW/RED**	The current legal context of Vietnam does not provide the necessary foundation for the development of a national open data initiative. The lack of personal data protection legislation, the fact that the access to information law is not effective yet ad is restrictive, and the content of the Ordinance on State secret protection that gives room to individual interpretation are barriers for data publication. At the same time, there is no other legislation to support and provide a framework for data publication. However, it is important to note that legislations regulate very strongly the way agencies and civil servants work and act. All the interviewees we met always refer to legislations to provide rationale for their actions. An appropriate legislation on Open Data may therefore have a quick implementation and impact on the ground.

3. Institutional Structures, Responsibilities and Capabilities within Government

3.1 Which agency or agencies have relevant capabilities, mandates, project management experience and technical skills to be a suitable lead institution in the planning and implementation of an Open Data Initiative? (Importance: Very High) YELLOW/GREEN

+ The overall leadership for an OD initiative should be driven by OoG who has a mandate for horizontal initiatives across the government, and demonstrated its leadership for the ODRA

+ Within OoG, APCA is well placed to drive the initiative and the coordination between agencies and ministries for data publication. APCA is also well placed to drive the development of specific legislation (open data policy), the capacity building program for change management, and drive the initiative globally (e.g. management of the M&E plan)

+ The Ministry of Information and Communication will have a key role in a future OD initiative as it has in its mandate[238]:

    o *"To guide, organize and inspect the implementation of programs, plans, projects, policies and regulations on the application of information technology; Regulations on investment management, evaluation of investment efficiency in the application of information technology using state capital; support enterprises and communities to apply information technology*

    o *To build an information system linking and facilitating the convenient access to national databases; To guide, inspect and evaluate the observance of law provisions related to the national databases.*

    o *To Promulgate or submit to competent authorities for promulgation and organize the implementation of regulations on interconnection, integration and sharing of information and data among ministries, sectors and localities; To announce according to its competence or submit to the Prime Minister for promulgation a list of shared information and data.*

    o *To manage the national program on IT applications in operation of State agencies;*

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238   Decree No. 17/2017/NĐ-CP dated February 17th, 2017 defining the functions, tasks and organizational structure of the Ministry of Information and Communications.

> *To assume the prime responsibility for implementing the information technology applications in operation of State agencies under the State administrative reform master plan.*
>
> o   *To guide localities to deploy information technology applications for developing and providing intelligent city services"*

+   Bộ Khoa học và Công nghệ hiện đang phụ trách Cổng Dữ liệu Mở- đây là một nhiệm vụ khá thuận tiện với Bộ. Bộ cũng đóng một vai trò quan trọng đối với việc thúc đẩy các công ty khởi nghiệp về Dữ liệu Mở của Chính phủ

+   Bộ Công An chịu trách nhiệm về Pháp lệnh Bí mật Nhà nước và đóng vai trò quan trọng trong việc điều chỉnh khung pháp lý hiện hành để hỗ trợ Dữ liệu mở

+   Bộ Tài chính chịu trách nhiệm về ban hành chính sách pháp luật liên quan đến phí và thuế, do đó Bộ có vai trò quan trọng trong việc gỡ bỏ các khoản phí đó

+   Tổng cục Thống kê có chức năng, nhiệm vụ và năng lực quản lý dữ liệu để hỗ trợ các cơ quan, bộ ngành trong quá trình công bố dữ liệu.

-    Không có cơ quan nào nhắc đến ở trên được xác định nắm giữ vai trò điều phối hệ thống dữ liệu mở

3.2   Which any agencies have a CIO, CTO or permanent official positions dedicated to data management? (Importance: Medium High) YELLOW

+   The MIC oversees monitoring the national databases

+   Per Decree No. 64/2007/ ND-CP of April 10th, 2007, all agencies and ministries *"are responsible for appointing a subordinate in charge of coordinating information technology related activities in their field. In provinces, Department of Information and Communication oversees coordinating information technology related activities of the province."*

-    There no position of CIO/CTO at the global level or in any agency or ministry

+   MIC is in charge of designing a list of information systems and databases that exists in agencies and ministries across the government, identify those that could be made open

3.3   What inter-agency mechanisms coordinate ICT issues (such as for technical matters)? (Importance: Medium High) YELLOW/RED

+   The MIC has the mandate to coordinate all ICT issues across governments and at the provincial level

+   Each agency at the national and provincial level has an IT service and ICT contact

+   The Access to Information Law No 104/2016/QH13 provisions a network of focal points to manage access to information requests

- Agencies and ministries seem to work in silos. There is no apparent coordination in IT investment or in IT infrastructure.

- There is no apparent coordination for the design and setup of specific IT systems between agencies in charge and MIC.

  0   Each ministry/agency is in charge of its public presence, even if MIC designs the framework for online public services

3.4 What process is currently used to measure agency performance or quality of service delivery? (Importance: Medium) YELLOW

- There is no evidence that a central agency is responsible for performance and quality monitoring purposes.

+ OoG measures and reports on completions of tasks assigned to different agencies and ministries. There are detailed statistics on tasks completion since 2014.

+ There is an annual survey at the provincial level that enable the GSRV to build the Provincial Governance and Public Administration Performance Index (PAPI[239]). All the data are published online

+ The Decision No.19/2014/QD-TTg[240] dated on March 05, 2014 of the Prime Minister requires the application of the national-standard TCVN ISO 9001:2008 Quality Management System in operation of state administrative agencies and organizations

+ The Circular No. 29/2017/TTBTNMT[241] dated on September 11, 2017 of Ministry of Natural Resources and Environment on Setting criteria for evaluating the quality of public services on database and applied software development in natural resources and environment fields.

+ The Decree No. 61/2018/ND-CP, Chapter V provides principles and modes of conducting internal assessment as well as via response and feedback of individuals, organizations using the service.

+ A site has been put in place by the GSRV to collect citizen feedback on public services[242]

+ One of the objectives of the Prime Minister (PM) is to build a performance-evaluation system to monitor the performance of ministries and provinces. A dashboard is being developed with the support of WB

+ GSRV and WB are currently investigating the setup of a delivery unit and a performance monitoring framework that includes performance dashboards.

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239   http://papi.org.vn/eng/documents-and-data-download

240   http://vbpl.vn/TW/Pages/vbpq-toanvan.aspx?ItemID=33572

241   https://thuvienphapluat.vn/van-ban/cong-nghe-thong-tin/Thong-tu-29-2017-TT-BTNMT-tieu-chi-danh-gia-chat-luong-dich-vu-xay-dung-co-so-du-lieu-323932.aspx

242   https://nguoidan.chinhphu.vn/

3.5 Which agency or ministry is primarily responsible for data or statistics? (Importance: Medium) GREEN

+   The General Statistics Office (GSO[243]) oversees all the statistics of SRV

+   GSO is integrated and works closely with the ASEAN Statistics Community. The 6th Session of the ASEAN Community Statistical System (ACSS) Committee[244] highlighted in its final communique the improvement of the GSO.

+   The WB Statistical Capacity Indicator for Vietnam[245] shows that the country is well equipped, has progressed on all dimensions in the last 10 years and is above the average in the region. The Statistical Capacity Indicator (SCI) is a composite score assessing the capacity of a country's statistical system. The recent improvements in Vietnam's SCI scores suggest the GSO is well qualified to provide technical advice and support on issues of data production and management.

3.6 Which agencies or ministries appear most concerned about the release of data, and what is the basis of their concern? How can these be handled procedurally, and how can their concerns be addressed? (Importance: High) RED

-    All agencies we met seemed concerned about the release of data. Risks cited include: opportunities for revenue, state secret protection or personal data protection

-    There is no perception of benefits for opening data

-    All agencies mentioned the lack of legal framework to support the publication of data. The mindset clearly stated by most of interviewees could be summarized in an "closed by default" approach.

+   There is already a number of information published across government sites.

3.7 How strong is the government's overall ICT skill base among senior government leaders and civil servants? (Importance: High) YELLOW/ GREEN

+   The MIC conducts very detailed analysis of ICT usage in state agencies and at the provincial level. This analysis is based on a detailed M&E plan that integrates 6 dimensions:

  o   ICT infrastructure;

  o   Deployment of ICT application;

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243   https://www.gso.gov.vn/Default_en.aspx?tabid=766

244   http://asean.org/storage/2016/11/ACSS6_Joint-Media-Statement_03Oct2016-final.pdf

245   http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

o   Electronic website/portal (information providing, support functions on the electronic website/portal);

o   Public services delivery;

o   Policies and regulations to promote ICT application and

o   Human resources for ICT application.

+   Last measurement (April 2017) showed that:

o   59% of documents exchanged in internal activities of agencies under ministries, ministerial-level agencies and government-attached agencies are both under paper and electronic forms

o   48% of documents exchanged in the internal activities of provincial agencies are both under paper and electronic forms

+   The Government has adopted an ambitious e-government strategy[246] aiming to offer all administrative procedure online

+   Per April 2017 MIC state of ICT in agencies review, ministries and ministerial-level agencies have paid attention to the organization of advanced training courses on the application of ICT to staff

+   MIC defines the list of ICT capacities required at the civil servant level

+   Training are organized by agencies. MIC organizes from time to time ICT training on latest technologies

+   Evaluation of ICT capacities is part of the recruitment process or the promotion of civil servants. 6 keys elements are evaluated including Word/Excel/Security/Internet skills/ General

-    MIC and some other ministries underlined the difficulties to hire and to retain highly-skilled staff due to the demand from private sector and the non-competitive salaries in public sector

3.8   What is the government's presence on the Web? (Importance: Medium) YELLOW/GREEN

+   All ministries and agencies have a web site

+   The websites are regularly updated, and all have recent news

+   Some ministries like Ministry of Health have Facebook pages[247]

o   There is no homogeneity in website design and structure. Each agency oversees its own site

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246   Resolution No. 36a/NQ-CP dated October 14th, 2015

247   https://www.facebook.com/botruongboyte.vn

+   A significant number of sites offer both Vietnamese and English language

-     Sites offering dual languages are not usually translating all the information

-     There is no license on any of the web sites for published data

-     We did not identify any public services available via mobile (IVR/SMS/USSD)

Đánh giá chính sách quản lý, quy trình thủ tục và dữ liệu sẵn có của chính phủ

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Lead institution for Open Data Initiative management	Very High	YELLOW/GREEN	The task force setup for the mission under the leadership of OoG and APCA demonstrated its efficiency. There is a series of complementary areas of expertise and intervention within the task force that is appropriate to drive the development of a national OD initiative. However, the concept of OD is not yet well understood by most people we met.
CIO, CTO or permanent official positions dedicated to data management at the ministry/ agency level	Medium High	YELLOW	There is no CIO/CDO/CTO position at the government level and in any agency. However, MIC is in charge of conducting a digital data inventory and propose to the PM the list of databases that should be open
Inter-ministry/ agency mechanisms to coordinate ICT issues	Medium High	YELLOW/RED	MIC is in charge of issuing regulations for State agencies online presence. This covers standards and technologies. However, there isn't close coordination between agencies, and in particular lots of investment and choices such as cloud infrastructure is done at the agency level, leading to duplication of effort and resources
Measurement of ministry/ agency performance or quality of service delivery	Medium	YELLOW	GSRV is currently investigating the setup of a delivery unit and a series of performance dashboards.
Agency or ministry in charge of central data or statistics	High	GREEN	GSO is in charge of all official statistics

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Agencies or ministries with concerns on Open Data	High	**RED**	The vast majority of agencies we met are concerned about the publication of data without any legal framework to support it. There is a complete lack of awareness on the concepts and benefits of OD.
Government's overall ICT skill base among senior government management and civil servants	High	**YELLOW**/**GREEN**	ICT skills is an important element of evaluation of civil servants for their recruitment or promotion. There is an evaluation framework based on 6 criteria for that purpose. MIC defines annual training plans and recommendations to be implemented by individual agencies. However, high-skilled staff, particularly on latest technologies such as data science can hardly be recruited by government agencies or retained due to the demand and the level of salary in the private sector
Government's presence on the Web	Medium	**YELLOW**/**GREEN**	All agencies have a web presence. Some of them have a FB page. However, it is up to each agency to manage their online presence leading to heterogeneity of web sites.
OVERALL	High	**YELLOW**	The leadership of OoG, the task force set for the mission, the overall online setup of all agencies are all essential elements to support the development of a national open data initiative. However, the current resistance of agencies due to their lack of awareness of the concept of OD and the lack of a legislation to support the publication of data are barriers that need to be addressed.

4. Government Data Management Policies, Procedures and Data Availability

What are the policies and practices on the management of government information? (Importance: High) YELLOW**/** GREEN

+ The law on archives No. 01/2011/QH13 defines requirements and processes to archive official documents

+ The Anti-corruption law No. 55/2005/QH11[248] details the transparency and information publication requirements for each sector (Article 11 to 33)

+ The decision No. 714/QD-TTg establishes a list of priority national databases to be developed and maintained. The 6 databases are:

  o National population database

  o National land database

  o National business registration database

  o National demographic statistics database

  o National financial database

  o National insurance database

  This decision, in article 3.d.1 and 3.d.2, allows for external requests and connections

+ Decree No. 52/2015/ND-CP dated May 28, 2015 establishes the National law database;

+ Decree No.73/2017/ND-CP dated June 14, 2017 regulates collection, management and use of data on natural resources and environment – Article 15. lists natural resources and environment data

+ Circular No.10/2017/TT-BKHCN dated June 18, 2017 establishes the national science and technology database

+ Decision No. 1975/QD-TTg dated October 30, 2013 approves the "Building of a national database on land".

248   http://dspace.africaportal.org/jspui/bitstream/123456789/12935/1/Viet%20Nams%20Law%20on%20Anti%20Corruption.pdf?1

+   Decision No. 768/QD-TTg dated June 22, 2012 approves plan for "compilation of national chemical inventory and national chemical database"

+   Decision No. 1699/QD-TTg dated October 20, 2009 establishes a national database on administrative procedures: http://csdl.thutuchanhchinh.vn/

+   MIC oversees monitoring on the national databases. Its mandate includes *"To build an information system linking and facilitating the convenient access to national databases; To guide, inspect and evaluate the observance of law provisions related to the national databases."*

-     The Ordinance on State Secrets Protection No. 30/2000/PL-UBTVQH10 and the set of related legislations define level of access for different types of information and identify the access restriction per domain

-     The Ordinance on State Secrets Protection provide a loose framework for agencies to decide what should protected or could be published. It seems that there is a large place for individual appreciation for such decision.

+   GSO maintains a series of reference data (10 common identifiers) that covers topics such list of products, list of industries.

+   Some agencies are using these reference data

4.2   To what extent does the government have a coherent view of its data holdings? (Importance: Medium) YELLOW

+   MIC is in charge of keeping records of data that can be shared. Its mandates include *"Promulgating or submitting to competent authorities for promulgation and organizing the implementation of regulations on interconnection, integration and sharing of information and data among ministries, sectors and localities; To announce according to its competence or submit to the Prime Minister for promulgation a list of shared information and data"*

+   GSO publishes annually the Statistical Year Book[249]

+   MIC is building a list of databases that exists across the government in order to recommend to the Prime Minister the ones that could be open

-     This list of datasets is not done yet and in construction only

-     Except those digital assets, there isn't a formal data inventory process within any of the agencies/ministries we met.

4.3   How and where is government data held?[250] (Importance: High) YELLOW

o   Each ministry has its own data center

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249   http://www.gso.gov.vn/default_en.aspx?tabid=515&idmid=5&ItemID=18533
250   See Section C of the ODRA annexes for details and links to data

  o Most data available are published across multiple web sites, in each agency web site

+ The article 6 of the Decree No. 64/2007/ND-CP requires a series of measures for digital preservation of information. Its article 41 introduces the principles of ensuring information safety, including backup procedures and alike

+ The article 13 of the circular No. 26/2009/TT-BTTTT (31 July 2009) about *"Providing for the provision of information and assurance of convenient access to websites of state agencies"* requires a detailed procedure for data protection and data backup.

+ MoNRE manages geo-spatial data. MoNRE has a GIS system with 7 layers: Legal dimension, terrestrial (plot), land price, land use, statistical and inventory data, land quality and inspection.

- Not the whole country is covered, but only part of it due to funding. Most of the effort was covered by WB-funded VLAP project (Vietnam Land Administration Project) but it is incomplete

- While there are numerous data published on various web sites, it is extremely difficult to search and find data already published.

+ The Itrithuc portal is a first step towards a central open data portal

+ The overall itrithuc approach that club together the open data portal with other functionalities more directed to user engagement is a great idea and a great opportunity to leverage visibility of the portal and promotion of OD

4.4 What is the extent of intra- and inter-government actual demand and latent demand for data? (Importance: High) YELLOW/RED

- There is apparently very little data sharing between agencies. The situation is even worse between national and subnational level. Agencies works in silos

- Data sharing with GSO is often in paper. GSO provide excel templates, but some agencies fill and print the template.

- As there is not yet any performance monitoring framework, there is no centralization of data from different agencies

+ The implementation of the e-government framework and the national databases provides an opportunity to create an interoperability framework that will ease data sharing.

- However, in some cases, the implementation of e-government services led to more data sharing issues. For example, Hanoi and HCM cities expressed major difficulties to access to business registries as this is now done online and centralized in MPI databases

+ Itrithuc portal is the first initiative to bring together different sources of data at the same place

4.5 What data is already made available outside government - either free or for a fee - and on what conditions? (Importance: High) YELLOW

+   Department of Survey and Mapping, Ministry of National Source Management and Environment Protection hosts lots of data

-    All the data of this department are available for a fee

+   Various sites publish data[251]

    o   MoF

    o   GSO

    o   Trade information portal

    o   Company registration information & Office Gazette

    o   Legislation

    o   Ministry of Industry and Trade (MoIT)

    o   Ministry of Health

    o   Ministry of education (MoE)

    o   PAPI data

    o   Ministry of Natural Resources and Environment (MoNRE)

    o   Central Bank

    o   Ministry of transport (MoT)

    o   Ministry of agricultural and rural development (MARD)

    o   National Biodiversity Database System

    o   Online database of administrative procedures[252]

    o   Itrithuc portal offer 287 "datasets"

-    Most data published have no license and

-    Most data are not available in a machine-readable format

+   Anecdotal case of the tax department of Hanoi publishing a list of companies not paying taxes, leading to more payments[253]

+   The Public Procurement Agency (PPA) has now move to an e-procurement system that is compliant with Open Contracting Data Standard (OCDS)[254]

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251   See annex for website addresses

252   http://csdl.thutuchanhchinh.vn/Pages/trang-chu.aspx

253   http://vietnamfinance.vn/cong-khai-danh-muc-doanh-nghiep-no-thue-giup-ha-noi-truy-thu-tot-hon-20160613085246191.htm

254   http://standard.open-contracting.org/latest/en/

- While the e-procurement site provides some procurements information, none of the data are published as OD

4.6 What practical experience does the government have in anonymizing personal data? (Importance: High) RED

- Law No. 89/2015/QH13 on Statistics required data anonymization.

- However, there is no awareness on anonymization techniques for data among all the interviewees we met

- We did not identify any technical capacities in any agency we met concerning anonymization of datasets.

4.7 Which agencies with established capabilities in data management (e.g. the NSO) could give leadership to a wider program? (Importance: Medium) YELLOW/GREEN

+ GSO has a recognized expertise in data management

+ GSO organizes training for statistical units of various ministries at least once a year

+ Most ministries have a statistical unit

    o   GSO has statisticians but does not have strong capabilities in data science. GSO therefore does not conduct advanced data analysis & visualization

- Recruitment of staff with IT and data management profile is difficult due to the demand from private sector and the non-competitive salaries in the public sector

Assessment of Government Data Management Policies, Procedures and Data Availability

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Policies and practices on the management of government information	High	YELLOW/GREEN	There are several legal documents governing different aspects of government information, including archives, but nothing specific to Open Data, including data reuse, licenses, or a common data repository. However, GSO has a series of reference data, and MIC is in the process of completing a digital asset inventory. Those elements are key for a future OD initiative.
Government-Wide Data Repository	Medium	YELLOW	There is a series of ongoing initiatives such as the national databases or the current inventory managed by MIC that provide some information about datasets available at the government level. However, except those specific elements, there is not yet any global directory of datasets, and any agency we met is engaged in such exercise or have such visibility of their data assets. The concept of the Itrithuc project that clubs together an OD portal with a series of other functionalities focused on user engagement is a great concept to leverage OD visibility.
How and where is government data held?	High	YELLOW	Each agencies and ministries manage their own storage/data center solution. MIC provides the policy environment and recommendations on how to store and protect government data, but there is clearly a duplication of resources across agencies, and not homogeneity in implementation solutions, leading to interoperability issues affecting today the implementation of national database
Intra- and inter-government actual demand and latent demand for data?	High	YELLOW/RED	There is very little data sharing between agencies at the national level, but also between national and subnational level. Data sharing is often done in paper format

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
What data is already made available outside government - either free or for a fee - and on what conditions?	High	YELLOW	A series of data is already published across web sites, in particular by GSO. However, it is extremely difficult to search and find the data already available. Some data are made available via forms (e.g. business registry, procurement information) but are not published as open data. Data published on Itrithuc portal are of poor value largely due to their quality. MoNRE has lots of data available, but available for a fee.
Government Experience on anonymizing data	High	RED	Among almost all agencies met, the concept of anonymization is largely unknown. In the same way, we did not identify any agency with technical capabilities in data anonymization
Agency with practical experience and expertise in data management that could lead an open data initiative	Medium	YELLOW/GREEN	GSO has practical experience and expertise in data management. However, they are lacking experience in anonymization. Most ministries have also a statistical unit that is connected to GSO who organize regular training. These existing relationships could be leveraged to develop capacities within ministries. However, the lack of awareness on Open Data is currently an obstacle.
OVERALL	High	YELLOW	Lots of data are already made publicly available across web sites. However, it is very difficult to search, find and therefore exploit those data. The data published on Itrithuc portal and on other city-level portals are for now of poor value. The initiative of national databases is an opportunity to publish more data. Most if not all agencies are unfamiliar with the concept of licenses attached to data, and there is no legislation regulating this aspect. The adoption of a license (CC-by-NC) on Itrithuc portal does not seem to have any particular rationale

5.   Demand for Open Data

5.1   What is the level and nature of actual demand and latent demand for data from Civil Society, Development Partners and the media? (Importance: High) YELLOW/GREEN

+   There are clear evidences of data demand and data reuse from international organizations' portal such as the WB[255]

+   In the same way, some university are exploiting international and national data for pollution monitoring[256]

+   There is an active mapping community split over different initiatives

    o   OSM Vietnam [257]

    o   Google Local Guides[258]

    o   The OpenDri initiative[259] organizing mapping exercise in Can Tho[260]

+   Toward Transparency[261] is the focal point of Transparency International in Vietnam and is interested in accessing more financial data

+   PanNature[262] has started on open data portal[263]

-    The open data portal is still in construction and does not host many datasets except those from PanNature

+   An event to increase data science literacy was organized in 2015 for the Open Development Initiative in Hanoi[264]

+   MDI[265] trains journalists on data-journalism, leading to more demand for data

255   http://www.worldbank.org/en/news/feature/2012/03/29/world-bank-more-open-accessible-and-searchable-data-support-vietnams-development

256   http://timbanchat.edu.vn/news/Hoat-dong-nha-truong/He-thong-canh-bao-va-giam-sat-muc-do-o-nhiem-khong-khi-su-dung-anh-ve-tinh-89/

257   https://www.facebook.com/osmvncommunity/

258   https://www.localguidesconnect.com/t5/Let-s-Meet-Up/LOCAL-GUIDES-amp-GOOGLE-MAP-MAKER-VIET-NAM/td-p/1861 https://plus.google.com/communities/115864486991778302071

259   https://opendri.org/ https://opendri.org/project/vietnam/

260   https://opendri.org/building-mapping-expertise-in-vietnam/

261   https://towardstransparency.vn/our-organisation

262   http://www.nature.org.vn/en/

263   http://opendata.vn/ https://www.facebook.com/pg/opendatavietnam/about/?ref=page_internal

264   https://sipa.columbia.edu/academics/capstone-projects/improving-data-science-literacy-open-development-initiative-mekong

265   https://www.mdi.org.vn/english/contact-us/

-   Globally there is very little expectation from non-governmental actors to access to quality OGD. Based on what is currently published, organization we met does not expect to see quality data available soon

5.2 What is the level and nature of actual demand and latent demand for data from business/the private sector? (Importance: High) YELLOW/GREEN

+   Some events are organized by the private sector to raise awareness on Open Data. See e.g. the workshop on "Open data ecosystem"[266] (august 2017 – HCMC)

+   FPT[267] has an open portal and a series of open APIs[268]

+   Smart cities are an important topic on which few events organized particularly in HCMC such as the Smart City Innovation Challenge[269]

+   Building the Shared Data Warehouse and Open Data Ecosystem is one of the four pillars of the Smart City program in HCMC[270]

+   The innovation actors are numerous with at least 25 tech hubs and incubators identified in the country in 2016[271]

+   Lots of the actors we met are in demand for more data for market research, for investment, for planning etc.

-   Globally there is very little expectation from non-governmental actors to access to quality OGD. Based on what is currently published, organization we met does not expect to see quality data available soon

    (Note: a more detailed analysis of business demand for data is in the accompanying Open Data For Business report in Annex.)

5.3 How do public agencies listen to demands for data and respond? (Importance: Medium) RED

-   All agencies met underlined the lack of legal basis to answer data requests

-   Agencies selling data such as MoNRE are more inclined to provide data via a service contract.

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266   https://www.qtsc.com.vn/en_US/web/qtsc-english/qtsc-news/-/ext/articleview/article/513001/37591;jsessionid=7E
      B1CE4FD64F488116F795C3B3B3F0BF

267   https://fpt.com.vn/en

268   https://openfpt.vn/

269   https://www.smartcityvn.com/

270   https://tuoitrenews.vn/news/society/20171017/ho-chi-minh-city-hopes-to-deliver-smart-city-benefits-to-resi-
      dents/42083.html

271   https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/things-learned-tech-hubs-afri-
      ca-asia

o   The difficulties mentioned above concern data requests only. Administrative procedures are handled professionally with a formal follow-up process, and in some case even a SMS service to let users know about the progression of the process. In the same way, agencies formally answer document requests.

5.4   How do external stakeholders view public agencies' willingness to listen to demands for data and respond? (Importance: Medium) RED

- All non-governmental actors mention the difficulty to get access to data from Government agencies in all domains from environment data to public finance, to land etc.

- Almost all actors mentioned the need to have a personal network or contacts in agencies to get access to data and this is largely unofficial

- Data published on web sites and on open data portals (Itrithuc, Danang portal) are of poor value, and poor quality in terms of completeness, disaggregation level, and timeliness

- Data already published are extremely difficult to find on various web sites.

- There isn't apparently significant difference between national agencies and city level agencies in the way they answer requests

Assessment of Demand for Open Data

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Level and nature of actual demand and latent demand for data from Civil Society, Development Partners and the media	High	YELLOW/GREEN	There is a strong demand from very different actors from innovation actors, to private sector, to CSOs working in environment or transparency, to NGOs working towards developing data journalism. However, based on what is available today, there is a low expectation from these actors about the willingness and the ability of GSRV to proceed with the publication of valuable data
Level and nature of actual demand and latent demand for data from business/the private sector	High	YELLOW/GREEN	This aspect is developed in the OD for Business report in the annex of this chapter. In few words, there is a strong demand from the private sector to access and exploit government data. However, like mentioned above, based on what is available today, expectations area low concerning the willingness and the ability of GSRV to provide those data.
How do public agencies listen to demands for data and respond	Medium	RED	Agencies met during the mission recognized their inability to publish or provide access to data due to the lack of a legal background for such publication
External stakeholders view on public agencies' willingness to listen to demands for data and response	Medium	RED	All non-governmental actors' feedback is that agencies do not provide data they request. Only personal contact and network can help to access informally data
OVERALL	Very High	YELLOW	The demand from all actors is high, but the expectations are low based on both what is published today, and how government agencies are responding to requests for data.

6. Civic Engagement and Capabilities for Open Data

6.1 Which potential infomediaries (such as data journalists) are able to help translate open data into meaningful information for the public? What actions are needed to develop or enhance these parts of the Open Data Ecosystem? (Importance: High) YELLOW

+ One organization, MDI, promote Data journalism[272] and investigative journalism in Vietnam[273]

+ An event on Data Journalism & Computer-Assisted Reporting was organized in 2015 by VCU's Robertson School of Media & Culture in Hanoi[274]

+ In 2016, in Hanoi, PanNature and Internews' Earth Journalism Network trained Vietnamese journalists and local NGOs on how to better source, analyze and incorporate environmental data to tell compelling stories[275]

+ Vietnam+[276] received support and training from CFI's 4-M Asia project[277] to develop data journalism

6.2 What activities has the government engaged in to promote reuse of government-held data (e.g., in developing apps or organizing co-creation events)? How could such promotion be developed or enhanced? (Importance: High) YELLOW/RED

- The desk research did not identify any activities run by the GSRV to reuse government data

+ The launch of iTrithuc owned by the MoST can be considered the initial step of national open data plan. However, only few ministries and agencies provide data and information to this Portal. Quality of information and the popularity of this Portal is still moderate.

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272   Data journalism is the use of data and number crunching in journalism to uncover, better explain and/or provide context to a news story. (Source: https://www.techopedia.com/definition/28593/data-journalism)

273   https://www.mdi.org.vn/english/contact-us/

274   http://wp.vcu.edu/datajournalism/2015/12/12/icfj-vietnam-tpp-workshops/

275   https://www.mekongeye.com/2016/12/06/environmental-protection-by-the-numbers-vietnamese-journalists-learn-to-use-data-to-tell-stories/

276   https://en.vietnamplus.vn/

277   http://www.cfi.fr/en/project/4m-asia

+   At the city level, HCMC organizes smart city innovation challenges[278]

+   There is a large set of competitions organized in Vietnam on technology innovation. This includes:

    o   Makerthon: a program contest for students in Vietnam organized by the Center of science and technology development for youth in collaboration with HCMC[279]

    o   Vietnamese Students IT Olympic: Organized since 1992 by Vietnamese Students Association and Vietnam Association for Information Processing[280]

6.3 What is the extent of engagement with government through social media and other digital channels? (Importance: Medium) YELLOW

+   Social Media (SM) are very popular with more than 38M users in Vietnam (penetration rate close to 41% of the population)[281]

+   Some ministries like the MoH have a Facebook page[282] (launch in March 2015) but there is no regulation or circular about the use of SM by State agencies

+   The Minister of Health considers the Facebook page as a channel to interact with Citizens and answers requests[283]

+   The Prime Minister, in January 2015, urged ministries and agencies to publish information on social media[284]

+   The OoG is in charge of supporting agencies in publish on social media

+   GSRV put a site to receive feedback and complain from citizens[285]

-    Social media can be blocked from time to time by authorities like in May 2016 for Facebook and Instagram[286]

6.4 To what extent is there an existing Apps Economy? (Importance: Medium High) GREEN

+   Vietnam is one of the countries in South and South-East Asia with the biggest number of tech hubs, innovation centers and incubators, with 25 identified in 2016[287]

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278   https://www.smartcityvn.com/

279   http://makerthon.vn/

280   http://www.olp.vn/olympic

281   https://www.slideshare.net/appota/vietnam-mobile-report-2017-75272740

282   https://www.facebook.com/botruongboyte.vn

283   https://tuoitrenews.vn/society/26422/vietnam-announces-health-ministers-official-facebook-page

284   https://tuoitrenews.vn/politics/25444/premier

285   https://nguoidan.chinhphu.vn/

286   https://freedomhouse.org/sites/default/files/FOTN%202017_Vietnam.pdf

287   https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/things-learned-tech-hubs-afri-

+   Internet penetration rate is above 54,19% in 2016[288]

+   Active 3G subscription every 100 citizens reach 39% [289]

+   The mobile broadband penetration is 43.32% [290]

+   The penetration rate of mobile telephony in rural areas is 65.76%[95]

-    The smartphone penetration is still relatively low at around 28.5%[291]

+   Vietnam was ranked the third fastest growing smartphone market in the world in 2015

+   In 2016, in urban areas, 72% of mobile users use smartphones and install in average 5 new apps per month[292]

+   With a score of 60.5 on content on the GSMA Mobile Connectivity Index, Vietnam is one of the most active mobile app economies in the region[293]

+   There is a huge number of tech innovation competitions such as e.g.

   o   Samsung Collegiate Programming Cup 2017[294]

   o   White Hat Summer Contest[295]

   o   Poly Hackathon 2017 organized for FPT Polytechnic University for university students[296]

   o   Microsoft Imagine Cup 2017[297]

+   UNDP with Hatch! (private IT company) organize the SDG Challenge competition that look at tech innovation to reach the SDG commitments[298]

+   SBV in collaboration with the MBI/ADB organized the first competition on "Fintech Challenge Vietnam" in 2018 with the participation of 141 Fintech companies from 27 countries.

ca-asia

288   MIC, 2017. White Paper on IT application in Vietnam 2017

289   MIC, 2017. White Paper on IT application in Vietnam 2017

290   https://markets.businessinsider.com/news/stocks/vietnam-telecoms-mobile-broadband-and-digital-media-statistics-and-analyses-1008073699

291   https://www.statista.com/statistics/467739/forecast-of-smartphone-users-in-vietnam/

292   https://www.slideshare.net/appota/vietnam-mobile-report-2017-75272740

293   https://www.mobileconnectivityindex.com/#year=2016&zoneIsocode=VNM&analysisView=VNM

294   https://www.codeground.org/   http://ictnews.vn/cntt/samsung-to-chuc-cuoc-thi-lap-trinh-quoc-te-samsung-collegiate-programming-cup-2017-155106.ict

295   https://whitehat.vn/threads/thong-bao-ve-viec-to-chuc-whitehat-summer-contest-2017.8752/

296   http://fpt.edu.vn/tin-tuc/20781/cao-dang-fpt-polytechnic-phat-dong-cuoc-thi-fpoly-hackathon-2017   https://cao-dang.fpt.edu.vn/hackathon/

297   https://ticketbox.vn/event/microsoft-imagine-cup-vietnam-national-final-64899/40521

298   http://sdg.hatch.vn/

6.5 To what extent is there an academic or research community which trains people with technical skills or has capabilities in data analysis? (Importance: Medium) GREEN

+ FPT Polytechnic University[299] has a series of technical degrees including technologies such as web development, software development or mobile development. It also includes data science (150 student/year) IoT and Big Data curriculum.

+ Post and Telecommunications Institute of Technology has also a series of degrees in information technologies[300]

+ Vietnam National University Ho Chi Minh City (ITP) has a master's program on data science with 20 students/year. They are currently investigating the launch of courses on IoT and blockchain technologies

+ Major cities have a university of science and technologies, this includes

  o Hanoi University of science and technology[301] has multiple degrees in technologies and has also various research centers such as the Center for Technology Innovations

  o University of Information Technology (UIT), member of Vietnam National University - Ho Chi Minh City (VNU-HCM)[302] has departments for computer science, information systems, software engineering.

  o Danang University of science and technology[303] that also have degrees and research in information technologies

+ In total, more than 250 universities offer IT-related courses and degree[304]

+ Around 80.000 students will graduate in ICT in 2017-2018[305]

+ The national academy of public administration train future civil servant. While they don't have technical modules, they have started some courses on digital economy

299 https://en-caodang.fpt.edu.vn/

300 http://portal.ptit.edu.vn/eng/

301 https://en.hust.edu.vn/home

302 https://en.uit.edu.vn/

303 http://dut.udn.vn/en

304 The White Book on Information and Communications Technology (ICT) 2017 of Vietnam http://english.mic.gov.vn/Pages/TinTuc/135632/MIC-officially-releases-ICT-White-Book-2017.html

305 https://baomoi.com/nhan-luc-cong-nghe-thong-tin-mong-so-luong-yeu-chat-luong/c/21969607.epi

Assessment of Civic Engagement and Capabilities for Open Data

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Potential infomediaries able to help translate open data into meaningful information for the public	High	YELLOW	There are lots of NGOs working in various sectors such as environment or transparency that are looking for data to inform citizens. In the same way, data journalism is developing in the country. However, the accessibility to data of media is of limited level, which may create barriers for a larger exploitation of published data
Government activities engaged in to promote reuse of government-held data	High	YELLOW/RED	We did not identify any initiative organized by GSRV to promote the reuse of OGD. At the city level, some event around smart cities are organized. However there is a series of Government-led challenges and competitions in the IT and innovation sector that could be used in the future to promote OGD reuse.
Government engagement through social media and online channels	Medium	YELLOW	There is no regulation with regards to State agencies using social media. Some ministries such as MoH have now a Facebook page, but interactions with citizens are limited
Apps Economy	Medium High	GREEN	The innovation sector in Vietnam is very dynamic, and there is a strong mobile app economy largely underlined by various international indexes and studies such as ITU Measuring the Information Society or GSMA Mobile Connectivity Index
Academic or research community training people with technical skills or with capabilities in data analysis	Medium	GREEN	Private and public universities have advanced courses and master's degree in latest technologies such as data science. However, the number of students trained in these areas is still low and absorbed almost uniquely by the private sector.

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
OVERALL	High	**YELLOW**/**GREEN**	The actors both in the innovation & startups sector, or NGOs and CSOs have both interest and capacities to access and use OGD. Private and public universities are putting in place advanced courses and master's degree in new technologies such as data science or IOT, even if the number of students is still low. Will the GSRV decide to invest in and launch an open data initiative, non-governmental actors are ready to take advantage of this opportunity

7. Funding an Open Data Program

7.1 How could resources be identified to fund an initial phase of an Open data Program? Who would need to take what action to do so? (Importance: Very High) YELLOW/GREEN

- No specific funding has been identified to fund the initial phase of an Open Data program

+ Strategic projects are funded by the state budget, and therefore, OD, if adopted as a strategic investment, could be funded by the GSRV

- There is no PPP models or opportunities for OD

+ The current Itrithuc portal has been entirely funded by private companies (DTT, Viettel, etc.)

- We did not identify ongoing projects, funding or donors that could provide funding the development of e-service using OD

7.2 What resources exist or have any been identified to fund development of initial apps and e-Services that will use Open Data? (Importance: High) YELLOW/GREEN

+ Lots of ICT initiatives are funded by the GSRV on its own funds. This is e.g. the case for smart-city development.[306]

+ Public-Private Partnership (PPP) is also an option[307]

- No specific funding has been identified to fund the development of initial apps and e-services

- We did not identify ongoing projects, funding or donors that could provide funding the development of e-service using OD

+ As mentioned in section 6.1, there are numerous innovation challenges organized in Vietnam. Some of them could be used to promote OGD reuse and development of government services

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306   http://www.vietnamadvisors.com/ho-chi-minh-city-and-smart-city-development/
307   http://www.vietnamadvisors.com/ho-chi-minh-city-and-smart-city-development/

7.3 What funding is available to support the necessary ICT infrastructure and ensure enough staff have the skills needed to manage an Open Data Program? (Importance: Medium High) YELLOW

+ Each ministry and agencies train their own staff following training plan designed by MIC

- Each ministry/agency decides the implementation of the trainings on its own

- We did not identify existing technical capacities related to Open Data in any agency. In particular, the agency in charge of the Itrithuc OD portal (NASATI) does not have technical capacities and the resources to manage the portal

7.4 What funding mechanisms does the government have for innovation? (Importance: Medium High) YELLOW/GREEN

+ Vietnam has a series of technology parks that provides a series of tax incentives for investors:

    o   Saigon Hi-Tech Park[308]

    o   Hoa Lac Hi- Tech Park[309]

    o   Quang Trung software park[310]

    o   IT park of Vietnam National University of HCMC[311]

    o   Danang Hi-tech Park[312]

+ Since 2013, GSRV and the Ministry of Science and Technology (MoST) has already engaged in the development of startups through the Vietnam Silicon Valley project[313] that includes an investment of $400.000USD and an accelerator program[314]

+ In May 2016, the Prime Minister issued Decision No: 844/QD-TTg[315] launching an ambitious plan de develop Vietnam startup ecosystems[316]

+ In November 2017, the Prime Minister has announced a Student Startup plan, to support the creation of startups by university students[317]

+ Apart from public funding, major companies such as FPT, Viettel or VNPT have different instruments, mechanisms and processes to support innovation either internally or externally

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308   http://www.eng.shtp.hochiminhcity.gov.vn/Pages/default.aspx

309   http://hhtp.gov.vn/en.html

310   https://www.qtsc.com.vn/en_US/web/qtsc-english/home

311   http://www.vnu-itp.edu.vn

312   http://www.dhtp.vn/eng/

313   http://www.vjsonline.org/news/vietnam-silicon-valley-project-interference-information-and-communication-technology-and

314   http://www.siliconvalley.com.vn/

315   http://hethongphapluatvietnam.com/decision-no-844-qd-ttg-dated-may-18th-2016-approval-for-assistance-policies-on-national-innovative-startup-ecosystem-to-2025.html

316   http://ipp.vn/en/kicking-off-vietnam-national-startup-ecosystem-infrastructure/

317   http://hhtp.gov.vn/en/uom-tao-va-khoi-nghiep/student-start-up-support-plan-ratified-9.html

Assessment of Funding an Open Data Program

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Resources to fund an initial phase of an Open Data Program	Very High	YELLOW/GREEN	We have not identified specific funding or projects that could be a good vehicle to fund the first stages of an open data initiative. However, some key elements like the Itrithuc portal are fully funded by private sector contributions. Moreover, for strategic projects, GSRV is able to mobile state budget and if the setup of an open data initiative becomes a priority of the Government, the funding is unlikely going to be a major obstacle. Note that we did not explore opportunities of funding with bi-lateral donors.
Existing resources to fund development of initial apps and	High	YELLOW/GREEN	We have not identified specific funding or projects that could be a good vehicle to fund the development of initial apps. However, there is a series of innovation challenges and competition that could be mobilize for this purpose. Moreover, like mentioned above, GSRV is able to mobile state budget and if the setup of an open data initiative becomes a priority of the Government. Note that we did not explore opportunities of funding with bi-lateral donors.
Funding is available to support the necessary ICT infrastructure and ensure enough staff have the skills needed to manage an Open Data Program	Medium High	YELLOW	MIC develops a training plan for agencies and ministries who then implement it. However, given that each ministry/agency implements their own plan, and select their own providers of training, there is no homogeneity in training content and skills development. Another core issue is the ability of the public sector to hire and retain highly skilled IT professional. Finally, there isn't any OD skills in any agencies we met.

| Question Area | Importance | Red/ Yellow/ Green rating | Assessment |
			Commentary
Government funding mechanisms for innovation	Medium High	**YELLOW**/**GREEN**	Innovation is a priority topic for GSRV and lots of incentives are provided in the form of tax rebates, or via the setup of incubation centers, and technology parks. The innovation sector is very dynamic and organizes numerous events and competitions. However, at the moment there is no specific funding for OD.
			Apart from government support to innovation, major companies such as FPT, Viettel, or VNPT have put in place their own innovation support mechanism.
OVERALL	Medium High	**YELLOW**/**GREEN**	While we have not identified specific funding available to support the development of a national OD initiative, given that lots of strategic projects are funded by state budget, given that the Itrithuc portal is entirely funded by the private sector, and given that there is already in place a process to develop civil servants' IT skills, it is unlikely that funding would be a major barrier for the launch of an OD initiative.
			Concerning innovation, the sector is very dynamic in Vietnam, and lots of incentives are in place to support the development of innovative ideas and startups. These incentives could be leveraged to promote innovation on OGD.

None of the innovation activities are focusing on Open Data

8. National Technology and Skills Infrastructure

Note that more details on the national technology and skills infrastructure are provided in the Digital Government Readiness Assessment chapter.

8.1 What is the local ICT "ecosystem"? Which technologies reach what proportion of citizens? (Importance: High) GREEN

+ Most state agencies have an updated web site

+ 94% of the population is covered by a 2G network (2015)[318]

+ 77.3% of the population is covered by a 3G network (2017)[319]

+ The 3G network coverage is significantly lower than the average of Asia & Pacific (87.6%)[320]

+ The Mobile phone penetration rate is 128%[321] and significantly higher than the average of Asia & Pacific (98.9%)

+ 93% of the household owns a mobile phone (96% in urban area, 91% in rural areas)[322]

+ The mobile-internet penetration rate is 46.6% similar to the average for Asia and Pacific (47.4%)

+ The overall internet penetration rate is 52.7%[323]

+ The social media penetration rate is 40.8% [324]

+ Only 39.5% of the adult population have an account at a bank or other financial institution or with a mobile-money-service provider[325]

+ There are at least 25 (GSMA study in 2016[326]) incubation centers, tech hubs, and incubation centers, a big part being in Hanoi and HCMC.

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318   http://data.un.org/Data.aspx?q=mobile&d=SDGs&f=series%3aIT_MOB_2GNTWK

319   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

320   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

321   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

322   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

323   https://www.slideshare.net/appota/vietnam-mobile-report-2017-75272740

324   https://www.slideshare.net/appota/vietnam-mobile-report-2017-75272740

325   http://data.un.org/Data.aspx?q=mobile&d=SDGs&f=series%3aFB_BNK_ACCSS

326   https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/things-learned-tech-hubs-africa-ca-asia

8.2 What is the level and cost of internet access, both by broadband and by mobile technologies? (Importance: High) GREEN

+   There are 5 mobile operators, 3 being state-owned

+   Vietnam is ranked number 3 in terms of affordability of internet access by the World Economic Forum Network Readiness Index[327]

+   Mobile cellular price is at 2.6% of the GNI per Capita[328] (source ITU 2017[329]) below the Asia & Pacific average (3.2%)

+   Mobile-broadband price for 500 MB is at 2.0% GNI pc below Asia & Pacific average (2.7%) (source ITU 2017[330])

+   Mobile-broadband price for 1 GB is at 3.2% GNI pc below Asia & Pacific average (5.4%) (source ITU 2017[331])

+   The International Internet bandwidth per Internet user is at 91.3 Kbit/s significantly higher than the average in Asia & Pacific (48.0 Kbit/s) and even higher than the World average (74.5 Kbit/s) (source ITU 2017[332])

+   Vietnam is ranked 21 at the world level (193 countries ranked by ITU) in terms of broadband internet penetration

+   Vietnam is ranked 37th most connected country out of 139[333]

+   Vietnam is ranked 107 (world level rank) in the ITU ICT Development Index 2017[334] and is ranked 17 at the Asia & Pacific level.

8.3 How readily available is compute and store infrastructure? (Importance: Medium High) GREEN

+   3 data centers have international certifications:

o   Data Center EPZ (part of FPT) in Tan Thuan Processing Area, D7, HCMC: the biggest in Vietnam covering an area 3300m2, capacity 800 racks of 42U and 47U

o   Data Center Pham Hung (part of FPT) in Hanoi: area 2400m2, capacity 700 racks of 42U and 47U.

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327   http://reports.weforum.org/global-information-technology-report-2016/networked-readiness-index/#indicatorId=NRI.B.04

328   https://www.unicef.org/infobycountry/stats_popup7.html

329   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

330   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

331   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

332   https://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2017.aspx

333   https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20globalization%20The%20new%20era%20of%20global%20flows/MGI-Digital-globalization-Full-report.ashx

334   https://www.itu.int/net4/ITU-D/idi/2017/index.html#idi2017byregion-tab

o   Data Center Nam Thang Long (part of VNPT) in Hanoi

+   There are numerous ISPs[335]

8.4   How strong are the IT industry, developer community and overall digital literacy? (Importance: High) GREEN

+   In state agencies: 71.29% of units have IT specialists with the average number of specialized staff at 3.86 people / unit; 93.95% of units at district/province level have IT staff with an average 2,39 staff per unit.[336]

+   the demand for IT employees is at the highest level in history with nearly 15,000 jobs created in 2016. According to forecast from Vietnamworks[337] , despite nearly 80.000 students graduating in 2017 and 2018, Vietnam will need around 70.000 more ICT staffs to meet the demand at the end of 2018. By 2020, Vietnam needs about 1.2 million employees in the IT industry.

+   According to the Ministry of Information and Communications, the total number of people in the IT industry is over 600.000, of which about 50% are employed in the hardware and electronics industries and 50% in the software industry and the digital content industry[338]

+   According to MIC Whitebook 2017, the total number of IT companies in 2016 is estimated at 24.501, an increase of 13.13% compared to 2015.

+   The total revenue of IT sector in 2016 is estimated at 1.500.000 billion dong (US $ 67,693 billion) increased by 11.49% compared to 2015, of which the hardware industry was 58,84 billion USD, the software industry was 3,04 billion USD, the digital content industry was 739 million USD and IT services (except for trading, distribution) was $ 5,08 billion. IT export turnover was estimated at 60,79 billion USD, of which electronic hardware was 57,74 billion USD, software was 2.491 billion USD.

+   The IT sector contribution to the state budget is estimated at 34,320 billion VND, contributing 3.4% of total state budget.

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335   http://www.allisps.com/en/offers/VIET-NAM
336   Source: MIC Whitebook 2017
337   https://www.vietnamworks.com/en
338   https://baomoi.com/nhan-luc-cong-nghe-thong-tin-mong-so-luong-yeu-chat-luong/c/21969607.epi

Assessment of National Technology and Skills Infrastructure

Question Area	Importance	Assessment	
		Red/ Yellow/ Green rating	Commentary
Local ICT "ecosystem"	High	GREEN	The ICT sector is very dynamic in Vietnam, and the country performs well in the region. The ICT and innovation sector can largely support and leverage a future OD initiative.
Level and cost of internet access	High	GREEN	Affordability is not a barrier in Vietnam who is ranked 3 by WEF networked readiness index.
How readily available is compute and store infrastructure?	Medium High	GREEN	There are numerous data centers and ISPs in the country to support ICT actors. More details on that topic are provided in the DGRA chapter.
How strong are the IT industry, developer community and overall digital literacy?	High	GREEN	The IT industry is very strong with companies like FPT working at the international level.
OVERALL	High	GREEN	The ICT sector in Vietnam is very strong and will be an asset to leverage an open data initiative and create the impact observed in other countries.

Conclusion

This Open data Readiness Assessment is designed to produce a rapid evaluation of Vietnam's readiness to launch and sustain an Open Data Initiative. In order to achieve this, the assessment looks at 8 key dimensions. While each dimension is important, the assessment methodology gives each a weighted rating of relative importance.

Dimension	Importance	Rating		
Senior leadership	Very high	Y		
Policy/legal framework	High	Y	R	
Institutional structures, responsibilities and capabilities within government	High	Y		
Government data management policies, procedures and data availability	High	Y		
Demand for open data	Very high	Y		
Civic engagement and capabilities for open data	High	Y	G	
Funding an open data program	Medium high	Y	G	
National technology and skills infrastructure	High	G		

The output of the desk research and the meetings during the mission show that Vietnam provides a solid foundation for the launch of a successful Open Data initiative, but also presents a series of challenges that will need to be addressed to ensure that the future OD initiative can develop smoothly and deliver the expected social and economic impact.

- **Leadership:** There is a clear leader OoG, and a leading agency, APCA, supported by a series of key ministries such MIC, MoST, MoF, MoPS or MPI including GSO. However, the main challenge we identified during the discussion is the lack of understanding about the specificities of Open Data, the difference between Open Data, and e-government framework and services, the specific activities required and the specific opportunities. It will be essential to raise awareness about the specific challenges, opportunities, and timeline that OD provides.

- **Legal framework;** The recent adoption of an ATI law is an essential element for OD. The meetings with the ministries also showed that the legal framework is a major driver for agencies and civil servants' actions. The setup of a dedicated OD legal framework will therefore very likely be followed closely by all agencies, leading to impact in the short term. However, at the moment, there is no policy/regulation on data sharing, publication and reuse of government data. While some regulations require disclosure of some information, there is no mention of format, licenses (terms of use) and process. There is

also no regulation/law on personal data protection. Most ministries and agencies have a weak understanding on which information must be protected and how to protect privacy.

- **Institutional framework:** The Government usually sets up steering committees and task forces to support horizontal activities and collaboration between ministries. The setup of a task force for this mission is a good example of that process that proved to be efficient during the assessment. In terms of roles, ministries seem to have complementary expertise and areas of interventions. OoG, MIC, MoST, MoPS, and MPI/GSO collectively have the mandate and experience required for an OD initiative

- **In terms of data at the Government level,** while there is a significant set of data published on various web sites, the quality of these published data seems problematic in terms of completeness, timeliness, disaggregation level. The data currently published on Itrithuc portal or on Danang portal are of low value for the non-governmental actors. Moreover, the culture of the use of data for policy making and performance monitoring seems weak, leading to low attention given to exploitation of existing data.

- **In terms of OD demand,** the various meetings with CSOs and businesses show that there is a strong demand for open data, particularly for transparency, for innovation and ICT services (GIS data), for market research and development, and at the sectorial level (environment, health, agriculture, tourism). There is also a nascent data journalism community, interested in accessing to more datasets. However, the vast majority of non-governmental actors have great difficulty to search and find already-published information, scattered across web sites in various formats. It is also interesting to note the non-governmental actors have very low expectations in terms of government data due to the quality of data already available and the current responsiveness of agencies

- **In terms of OD ecosystem,** the innovation ecosystem in very active in Vietnam, with lots of active innovation hubs and incubators and a strong support from MoST, from national to city level. However, the dialog between government agencies and non-governmental actors seem weak and inefficient. Many actors highlighted the need for personal networks to access data from agencies.

- **In terms of infrastructure, technology and skills,** the high penetration rate and the affordability of mobile and mobile broadband are good for the development of ICT services. In terms of skills, there are a series of public (e.g. VNU) and private (e.g. FPT university) institutions developing courses related to latest technologies such as Data Science. However, the volume of skilled IT staff is low on latest technologies and they are absorbed by the private sector with high salaries and can't be attracted or retained by the public sector.

The development of an OD initiative could critically contribute to some of the key government priorities:

- **Performance monitoring framework:** The design and setup of an efficient performance monitoring framework requires the collection and exchange of massive set of data between

agencies and ministries and the unit in charge of the performance monitoring. The use of open data approaches and technologies is the easiest, quickest and cheapest way to implement such data sharing approach. In the context of Vietnam, exploring the setup of such framework and the setup of a delivery unit that also needs massive datasets, the implementation of an OD initiative will be a major support to these activities.

- **Vertical bi-directional data flows from national to city level:** There is a growing demand of data exchange between the various administrative levels of Vietnam. Cities like HCMC are designing their plan for smart cities and need data from national agencies and ministries to be more efficient and more innovative. National level agencies also need more data from cities, district and province to build their own indicators, and use data for policy making. This bi-directional data flow must be developed. While the national database is one option, it is a long-term objective, while the implementation of an OD initiative can provide results rapidly and support the development of the country at all levels.

- **Innovation and business development in key sectors:** Finally, innovation sector and start-ups could be more effectively supported through the provision of quality data. In the same way, Vietnam's key sectors such as tourism or agriculture need to do efficient market analysis and need to plan carefully their development. Industries and actors are limited in their activities due to the lack of this critical data. They use private firms' non-free data whose sources are unknown, and whose terms of use are restrictive. The development of an OD initiative will remove those barriers, make all businesses from all sectors more efficient and lead to the social and economic impact measured in OD early-adopter countries.

Vietnam could therefore largely benefit from the launch a national open data initiative. The action plan in the next section proposes a detailed set of activities to address the barriers identified in the study and create the conditions to maximize the expected impact of such initiative.

Action Plan

This section presents the action plan in detail activity by activity according to the 8 dimensions of the ODRA. These actions are ordered in time in three categories: the short-term actions can be implemented immediately or in the first 12 months of the launch of the plan; medium-term actions that usually have prerequisites (performing certain short-term tasks) for which are achievable within the first 24 to 36 months of the plan's launch; long-term actions aimed at sustaining the initiative and the elements to be put in place to reach its cruising speed. The proposed timeframe is aggressive but reasonable. One of the key objectives of the action plan is to create a momentum by massively investing at the beginning of the initiative on the development of the key building blocks such as an appropriate legislation, an open data portal or the publication of datasets. Note that the time period (short-term, mid-term, long-term actions) refers to the time when actions can be completed, not when they should start. For example, the design and pass of a personal data protection legislation is a complex work than usually requires a couple of years at least to be completed. But the work on such a legislation should start as soon as possible.

Note that for some of the activities, costs are evaluated. These costs are solely related to the use of external resources such as national or international consultants, or logistics costs for the organization of meetings, trainings or workshops. They do not include government personnel costs, as well as all ancillary costs related to personnel (transportation, per diem, insurance) and the cost of general computing resources (server, personnel computers, etc.) not directly related to Open Data. One of the actions of the SC will be to build a detailed budget taking all the costs of the initiative, drawing in particular from the cost assessment tools recently proposed by a study funded by the Open Data team of the WB[339].

Short-Term Actions

This section lists actions that could be launched during the first 6 to 12 months of the initiative, without pre-requisite.

Leadership

›   **Prime Minister of SRV makes an official public announcement of launch of Vietnam Open data Initiative**

   o   Responsibility: Office of the Prime Minister

   o   Time needed: 1-2 month

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339   http://www.r4d.org/wp-content/uploads/R4D_OpenGov_Priceless_web.pdf

      o   Cost: NA

      o   References

- Briefing on Open data Declarations[340]

- Similar Declarations of Open data/Open Government[341]

› **Install an operational Task Force for the Open Data Initiative (ODTF)** with the same representatives as with the ODRA/DGRA task forces. The ODTF should be under the leadership of OoG, and within OoG, APCA. The ODTF should be governed by a charter that includes:

      o   Identification of ODTF members and their respective role related to implementation (policies, ICT elements, etc.).

      o   Establishment of a roadmap and a detailed budget for the first 12 to 24 months of the initiative.

      o   Key work items (largely actions described in this document) and respective responsibility SC members.

It is recommended that the task force is dedicated to Open Data as the setup and development of an open data initiative has specific challenges, requires specific tasks and focuses on a specific audience. However, the task force should coordinate with the Digital Government task force as appropriate for optimal efficiency.

      o   Responsibility: OoG

      o   Time needed: 1-2 month

      o   Cost: Staff time dedicated to the SC in the order of 20% for each member

› **Recruit the head of the OD Initiative (ODCEO).** The ODTF should be led and chaired by someone that can drive change, with a good understanding on how the administration works, and a clear vision of the potential of OD

      o   Responsibility: ODTF

      o   Time needed: 1-3 month

      o   Cost: The salary of the person plus an office

› **Recruit the CIO/CTO of the initiative (ODCTO).** The OD initiative should also have a technical leader (CTO) to coordinate technical activities. The profile of the CTO is a technical person mastering all aspect of an OD initiatives from format to licenses, to portal to data management.

      o   Responsibility: ODTF

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340   http://data.worldbank.org/sites/default/files/1/briefing-on-open-data-declarations-generic.doc

341   http://data.worldbank.org/sites/default/files/1/declarations.pdf

o Time needed: 1-3 month

o Cost: The salary of the person plus an office

› **Design of Monitoring and Evaluation framework for the national open data initiative and for individual agency.** The M&E plan should be the responsibility of the ODTF. The plan should take into consideration how international indexes such as the Open Data Barometer[342] or the Open Data Index[343] are measuring OD impact.

o Prerequisite: ODTF is in place

o Responsibility: ODTF

o Time needed: 3-6 months

o Costs: 20-30k for experts' support. The design of a specific OD M&E plan may require the use of international expertise, as we have not identified people or organizations with such expertise during the ODRA.

Legal Framework

› **Develop an Open Data legislation** to provide a legal foundation for the publication of government data on the OD portal. In particular, the legislation should cover the following elements

- The scope of the legislation and in particular the entities that are covered. It is recommended to define the legislation to cover all public sector entities at the national and subnational level, all public companies, and all companies that deliver public services.

- The specific set of licenses allowed: each type of document (reports, datasets, documentation, etc.) should have a default minimal license and a specific process to allow exceptions.

- The allowed format & maturity level for datasets: The open data legislation should require that datasets use open formats with a minimal quality of publication against industry best practices.

> Open by Default represents a real shift in how government operates and how it interacts with citizens. At the moment we often have to ask officials for the specific information we want. Open by default turns this on its head and says that there should be a presumption of publication for all. Governments need to justify data that's kept closed, for example for security or data protection reasons. To make this work, citizens must also feel confident that open data will not compromise their right to privacy. https://opendatacharter.net/principles/

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342 http://opendatabarometer.org/

343 http://index.okfn.org/

- Metadata format and content.

- Accepted data formats for publication, building on existing standards[344]

- The M&E plan for the whole initiative.

- The directive should also state the no-fee regulation for raw granular data in electronic format.

- The directive should set the "open by default" principle.

o   Responsibility: ODTF

o   Time needed: 4-12 months

o   Cost: The costs include

- The drafting of the directive that requires expert advice. Estimation for an international expert to support the drafting process that includes the definition of data license, and other elements is 50-70K USD. Given the specificity of OD legislations, the use of international expertise with experience in other countries on this exact task should be considered.

- Staff time to drive the directive and ensure that it is passed

- Staff time to raise awareness of the directive within the various agencies of the government. This should be covered by ODCEO, ODCTO and ODTF members as part of their duties.

o   References:

- Open Data Policy:

    º   Open Data Policy of the Government of Mexico (Spanish)[345]

        ▷   ODI analysis[346]

    º   France's Open Data Policy[347]

    º   ODI guide on How to write a good data policy guide[348]

- Datasets maturity level:

    º   Tim Berners-Lee 5 stars model[349]

    º   ODI Maturity level[350]

- Licenses:

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344   See http://opendatahandbook.org/guide/en/appendices/file-formats/

345   http://www.dof.gob.mx/nota_detalle.php?codigo=5382838&fecha=20/02/2015

346   http://oldsite.theodi.org/open-data-enshrined-mexico-constitution

347   https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000034194946&categorieLien=id

348   https://oldsite.theodi.org/guides/writing-a-good-open-data-policy

349   http://5stardata.info/en/

350   https://oldsite.theodi.org/guides/maturity-model

º   Government Licensing Framework[351]

º   Licensing Open data: A Practical Guide[352]

› **Update the Law on Finance to remove the fee regulation for the provision of raw granular data.** This legislation establishes fees for data provision and is used by e.g. ministries and agencies to sell data within and outside the Government. This legislation should be removed as soon as possible to enable the publication of raw granular data on the OD portal.

o   Responsibility: ODTF+MoF

o   Time needed: 4-6 months

› **Update or complement the Ordinance on Protection on State Secret to define very precisely the exact set of data that must be protected and remove all possible individual interpretation.** The current legislation is too broad and not precise enough giving room for individuals to interpret its scope. This legislation should be amended to define very precisely the set of data that must be protected.

o   Responsibility: ODTF + MoPS

o   Time needed: 6-12 months

> The principle of no-fee on public data that is at the heart of the open data movement, has its roots in 2 elements:
>
> - The collection and storage of public data is executed with taxpayers' money, and therefore it is natural that the taxpayers have access to the data without paying a second time.
>
> - Except the previous more philosophical argument, the main reason to promote no-fee for raw data approach is a financial reason. A series of micro-level and macro-level economic studies have demonstrated that the social and financial impact (tax collected from created companies, job created, etc.) of Open Data is greater by two or three degree of magnitude compared to the amount of money collected from selling raw data. It is therefore recommended to publish raw data without fee to promote innovation, and reuse, that will in turn bring more benefits to the country than the direct selling.

Institutional Structures, Responsibilities And Capabilities Within The Government

› **Setup of a technical team & select "early-mover" agencies.** In order to assist ministries and agencies that want to engage in OD process, a technical team should be put in place and then assigned to the agencies for them to develop their processes and capabilities. The prioritization of ministries and agencies should be based on the willingness of the institution and on the demand from non-governmental actors. Topics that were identified during the mission are:

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351   http://www.nationalarchives.gov.uk/information-management/uk-gov-licensing-framework.htm

352   http://discovery.ac.uk/files/pdf/Licensing_Open_Data_A_Practical_Guide.pdf

- Public Finance & State Bank data

- Environment data

- Statistics and detailed census data

- Geospatial data

- Business registry

o   Responsibility: ODTF+ ODCTO

o   Time needed: 2-4 months for setup and then the team should run for at least 24 months

o   Costs: different solutions are possible:

- The setup of a dedicated team under the management of the ODCTO and likely located at MIC. This team should be composed of 5-6 people with complementary expertise on topics such as portal publications, data cleaning or anonymization. In that case, the cost will be the costs of the personals full-time for a first period of 24 months.

- The setup of a "data fellows" program, where highly qualified people are recruited on a short-term basis (6 months) and are placed in different agencies. These fellows are then coordinated by the ODCTO to ensure knowledge and experience sharing. The cost for a 24 months data fellowship program is in the order of 400-500k.

o   References

- Mexico Open Data Squad[353]

- US Government Presidential Innovation Fellows[354]

› **Change management Training & Communication campaign for high-level civil servants (PS, Head of Cabinet, DG, Mayors, Deputy Mayors).** This training will target high-level civil servants and develop awareness of the core principles of OD, its benefits and the processes to mainstream in agencies to publish open data.

o   Responsibility: ODTF+ODCTO

o   Prerequisite: The official announce of the PM is completed, and a circular provides some legal background for data publication

o   Time needed: 1-2 months to organize a session

o   Costs: 100-150k for experts to organize a series of sessions over 12 to 24 months. Local expertise should be preferred, and some organizations identified during the

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353   https://oldsite.theodi.org/case-studies/mexico-case-study-using-data-squads-to-jump-start-government-open-da-ta-publishing

354   https://presidentialinnovationfellows.gov/

ODRA have the competencies to run such program, but may need some support (e.g. a train-of-trainers program) from international firms with experience running similar programs in other countries.

› **Training & Communication campaign for Access to information officers.** This training will target the future access to information contact points and will develop capacities on the content of relevant laws, on the approach to take for anonymization, on the process to handle data requests, and related topics

  o   Responsibility: ODTF+CTO

  o   Prerequisite: The official announce of the PM is completed, and a circular provides some legal background for data publication

  o   Time needed: 1-2 months to organize a session

  o   Costs: 100-150k for local experts to organize a series of sessions over 12 to 24 months. Local expertise should be preferred, and some organizations identified during the ODRA have the competencies to run such program but may need some support (e.g. a train-of-trainers program) from international firms with experience running similar programs in other countries.

› **Training & communication campaigns for data managers and IT personal.** This training is technical and focuses on data managements, data anonymization techniques, and data publications.

  o   Responsibility: ODTF+ODCTP

  o   Prerequisite: The official announce of the PM is completed, and a circular provides some legal background for data publication

  o   Time needed: 1-2 months to organize a session

  o   Costs: 250 to 300k to organize a series of sessions over 12 to 24 months

  o   References:

    • Tanzania Open Data Dives[355]

› **Design and development of a series of manuals of procedures:** These documents will support the different types of personal in their tasks related to opening data (anonymization, law requirements, etc.). Different manuals should target different types of users such as the Access to Information focal points, technical team, etc. One of the manuals will be a technical manual dedicated to data format for publications, and the recommended metadata schema based on DCAT/Dublin Core. It will also include data publication guidelines

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355   https://www.youtube.com/watch?v=7BXHv-JGPXQ

o   Responsibility: ODTF + ODCTO

o   Time needed: 6-12 months

o   Costs: 20 to 30K USD depending on the number of manuals.

o   References:

- EU Practical Guide for Data Managers[356]

- San Jose's City Administrative Policy Manual - Open Data Implementation Policy and Procedures[357]

- Open Data handbook[358]

Government Data Management Policies, Procedures and Data Availability

›   **Design and development of a data inventory.** The selected agencies should engage in a data inventory process. This inventory could start with datasets already identified as part of the study[359] and should then be completed and published to initiate feedback from all stakeholders.

o   Responsibility: ODCTO + ODTF

o   Prerequisite: Priority agencies selected

o   Time needed: 2-4 months

o   Costs: 40-70k for experts to design the process, train agencies representative and monitor the implementation of the process.

o   References:

- US Government Implementation guide for data inventory[360]

- Johns Hopkins University's Center for Government Excellence (GovEx lab) Data Inventory Guide[361]

- Data San Francisco's data inventory guide[362]

›   **Centralization of existing data on the Open Data portal.** The OD portal could easily be extended by centralizing all datasets already published[363]. In particular, we identified the following datasets/institutions that could be immediately engaged

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356   https://www.europeandataportal.eu/en/providing-data/goldbook

357   https://www.sanjoseca.gov/DocumentCenter/View/56784

358   http://opendatahandbook.org/guide/en/

359   See section C of ODRA annexes on identified datasets

360   https://project-open-data.cio.gov/implementation-guide/

361   http://labs.centerforgov.org/data-governance/data-inventory/

362   https://datasf.org/resources/data-inventory-guidance/

363   See Section C of ODRA annexes

- Business registry

- Procurement data

- MoNRE Geospatial data and maps

- MoT Geospatial and other data

- GSO datasets

- Digitized state archives

- MoH data such as authorized medicines, authorized doctors, health centers, etc.

- Assembly data (laws, legislation, etc.)

- All data already gathered/identified for national database: land, census, public finance, etc.

> An open data portal, from a technical perspective, is like a website. In that regards, the portal must comply with Vietnam security standards and regulations for websites. However, because the Open Data portal is a read-only repository of information, and because the datasets are not sensitive (public, anonymized information), there is no need to take specific measure for the portal.

o   Responsibility: ODTF + ODCTO

o   Prerequisite: The technical team is in place to help corresponding agencies

o   Time needed: 3-6 months. The setup of an open data portal is usual a quick process that relies on the use of open source software, and that can be launched with a minimal number of datasets that grows over time. It is important to launch a portal in the very early days of the program so that progress and momentum can be sustained.

o   Costs: NA the costs are related to the use of the technical team

›   **Development of reference data.** GSO has already a series of reference data. These should be published, documented and used by all agencies. Based on the needs that will emerge from the OD initiative, new reference data may be needed (e.g. Geo names).

o   Responsibility: ODCTO + ODTF + GSO

o   Time needed: 4-8 months

o   Costs: There is no direct costs, but this item require heavy coordination and cross-agencies discussion

Demand for Open Data

›   **Organize OpenDatathon on some specific topics to develop internal and external use-cases and shining examples.** The objective here is to promote OD both within GSRV and among non-governmental actors. Different types of events could be organized:

- Events targeting innovation actors and aiming at developing specific services for specific government agencies in different sectors. Performance dashboards could be another example of a specific event focus.

- Events targeting CSOs & media on transparency and accountability. These events could also focus on different domains (public finance, public procurement, etc.)

o   Responsibility: ODTF + ODCTO + MoST + specific agencies (different for each event)

o   Time needed: 2 months per event, at least 3/year for the first 2 years of the initiative

o   Costs: 25-30k per event for marketing, logistics and prices

› **Develop a communication campaign targeting media, innovation sector and CSOs about the open data portals and designate a contact point for dataset requests.** The objective is to promote OD. This campaign should not only promote reuse of data but also publication of data by non-governmental actors.

o   Responsibility: ODTF

o   Time needed: 4-8 months

o   Costs: 30-50k mainly for a communication campaign, including flyers, workshops, etc.

Funding an Open Data Program

› **Identify budget for all the activities of the action plan.** The ODTF should build a detailed budget and explore options for funding. For ownership and sustainability, the GSRV should consider funding the initiative from the State budget. Some options such as in-kind contribution by external companies for e.g. portal setup should be considered. External funding by bi-lateral or international donors is also a potential option to fill some of the gaps, particularly in terms of initial investments, that may be identified. If GSRV is interested to investigate such funding, it would be important to develop a detailed budget highlighting contribution from the State (in-kind for staff time, etc.) and the gaps that need to be covered.

o   Responsibility: ODTF

o   Time needed: 2-3 months

o   Cost: NA (ODTF member duties led by ODCEO)

National Technology and Skills Infrastructure

› **Develop a new Open Government Data Portal.** A new dedicated OD portal should be setup under the authority of APCA/ODTF in order to identify clearly the central

government repository of official information. This new portal should be interoperable and should be linked with the Itrithuc portal so that the catalog of datasets of the official portal appears on Itrithuc portal to maximize visibility and reuse of datasets. Key functionalities to maximize attractiveness and exploitation of data sets include:

- A dataset request module with a formal ticketing system to enable users to request specific datasets

- A dataset feedback module with a formal ticketing system to enable users to report issues on published datasets

- A series of watchdogs that check the quality of datasets and their compliance to the OD legislation and the data inventory (format, maturity level, timeliness, etc.)

A mechanism for the publication of datasets from non-governmental actors should also be considered. Such functionality exists on e.g. the French[364] and the Estonia[365] OD portal. However, this functionality might fit better on Itrithuc portal that should have a focus on non-governmental actors.

o   Responsibility: ODTF+ODCTO

o   Time needed: 2-6 months

o   Costs: The development of the OGD portal could use a similar funding model as the Itrithuc portal. Otherwise, in most countries, the development of an OGP portal is in the order of 50-75k USD. As the setup of the Itrithuc portal demonstrates it, such expertise exists in Vietnam.

Mid-Term Actions

This section lists actions that could be launched in a second phase of the initiative after the short-term actions are completed.

Leadership

›   **An OD institutional home for open data should be created** as part of a broader government approach to digital government. The ODTF is a perfect instrument to lead the first 24 to 36 months of the initiative but then to ensure the sustainability of the initiative, OD should be institutionalized like done in most countries. This item also includes the creation of a permanent position of Chief Information Officer or Chief Data Officer

o   Responsibility: ODTF

o   Time needed: 6-12 months (to start after 18-24 months)

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364   https://www.data.gouv.fr/en/
365   https://opendata.riik.ee/en/juhendid

o   Costs: internal costs such as staff time and offices. Compared to other countries, the team is about 5 to 8 full time staff, including the ODCEO, the ODCTO and technical staff.

o   References:

- Government Digital Service in UK[366]

- Etalab in France[367]

›   **OD Initiative Impact measurement.** After 24 months, it would be useful to have a deep impact measurement campaign, to evaluate the output of the initiative and to design a corrective plan if necessary.

o   Responsibility: ODTF

o   Time needed: 3-6 months (to start after 24 months)

o   Costs: internal costs such as staff time and offices

o   References:

- McKinsey Study on OD impact[368]

- EU report on OD economic benefits[369]

Institutional Structures, Responsibilities and Capabilities within the Government

›   **Engagement of all ministries and agencies** Based on the same models as the similar short-term actions (data inventory, centralization of datasets, training) , as the initiative develops, more ministries and agencies should be engaged and the initiative should be scaled-up to cover the whole government. This process should then be expanded to the subnational level. Note that agencies should focus first on data that is readily available in electronic format and without sensitive information (quick wins). Then, overtime time, the publication roadmap should be driven by the effort required for specific datasets as well as the demand for the information.

o   Responsibility: ODTF

o   Time needed: 18-36 months

o   Costs: see short-term actions for data inventory, centralization of datasets, and the 3 types of trainings

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366   https://www.gov.uk/government/organisations/government-digital-service

367   https://www.etalab.gouv.fr/

368   https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information

369   https://www.europeandataportal.eu/sites/default/files/analytical_report_n9_economic_benefits_of_open_data.pdf

› **Setup of automatic publication mechanism.** While, as it is done today, publication can be bootstrapped with manual datasets cleaning and upload, the sustainability of the initiative depends on the automation of the processes. As the initiative develops, it will be important to create automated publication procedures.

  o Responsibility: ODTF+ODCTO+tech team

  o Time needed: 18-36 months

  o Costs: Difficult to evaluate as it depends on the systems in place in agencies and ministries.

Government Data Management Policies, Procedures and Data Availability

› **Development of advanced data services:** While raw granular data should be available for free, there are opportunities for government agencies to develop more advanced data services for both internal and non-governmental customers. The OD4B assessment clearly showed that a number of businesses are ready to pay for such services. The future delivery unit is also likely going to be in demand of such service. They are two possible models for developing such services:

  • Promoting the development of such service within each agency and supporting them in the setup or in the execution of tasks with the ODTF technical team. Interested agencies will have to identify or hire people with appropriate data analytical skills.

  • Developing such a service as a central government service that will be in charge of managing customers and then executing the tasks in collaboration with agencies involved. This approach would fit well with the setup of an institutional home for OD, and as a mean to cover (part of) the cost. This model may be more efficient in terms of setting up a strong technical team, and in order to address tasks that require data mashup from different sectors and agencies. On the other hand, it requires close relationship between the executing team and all agencies across governments.

  o Responsibility: ODTF+ODCTO+tech team

  o Time needed: 18-36 months

  o Costs: Difficult to evaluate as it depends on the model selected.

Demand for Open Data

› **Focus some of the MoST investment funds and competitions towards OD services and OD startups.** MoST has a series of incentives and runs a series of innovation events to promote startups and innovations. Dedicating part of this budget to support businesses and innovative services built on open data would be a good way to promote OD, create shining examples, and support economic impact of the OD initiative.

    o   Responsibility: ODTF + MoST

    o   Prerequisite: The OD portal hosts enough datasets and a request mechanism is in place

    o   Time needed: 12 -18 month

    o   Costs: There will be no extra cost.

Long-Term Actions

This section lists actions that could be launched to sustain the OD initiative on the longer term, after the initial 36 months.

Leadership

›   **A CIO/CDO position should be created in all ministries to support more efficiently the publication of data.** To ensure the long-term sustainability of the initiative, each ministry should have a dedicated person for the management of data assets

    o   Responsibility: ODTF

    o   Time needed: 24-36 months to nominate CIOs/CDOs

    o   Costs: a new full-time person per ministry

Legal Framework

›   **Develop a Personal Data Protection legislation** to provide a legal foundation for the protection of personal data and the processes that need to be applied to personal data.

    o   Responsibility: ODTF + APCA

    o   Time needed: 12-24 months

    o   Cost: NA

    o   References:

        •   EU Regulation 2016/679[370]

        •   Comparison of US and EU personal data protection legislations[371]

Government Data Management Policies, Procedures and Data Availability

›   **Digitize all archived documents and publish them on the open data portal.** The archives have a major historical value, and some of them are already suffering for bad storage

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[370]   http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.119.01.0001.01. ENG&toc=OJ:L:2016:119:TOC

[371]   http://www.europarl.europa.eu/RegData/etudes/STUD/2015/536459/IPOL_STU%282015%29536459_EN.pdf

conditions. The digitization of all archives will ensure their conservation and will easy their access. This covers also archives at the ministry and agency level. The State Records Management and Archives Department will provide and manage the framework and processes for these tasks.

- o   Responsibility: State Records Management and Archives Department.

- o   Time needed: 12-24 months to put in place tools and human resources to digitize archives and publication of the open data portal. But the complete digitization will take a long time.

National Technology and Skills Infrastructure

›   **Setup of a Data innovation lab.** The ecosystem could largely benefit from the setup of a dedicated entity to structure and support non-governmental actors and to structure and support the government at all levels from city to national, in replacement of the technical team. Such entity will also leverage the social and economic impact of OD.

- o   Responsibility: ODTF+MoST

- o   Time needed: 36-48 months

- o   Costs: 750k to 1M to create and support the organization till it reach its sustainability point.

- o   References:

    - • US Govlab[372]

    - • dLab Tanzania[373]

    - • Jakarta Open data Lab[374]

›   **Development of Msc. and postgraduate training programs in data science, including open data modules, in Universities.** On the long-term, as more organizations are exploiting data, the demand for data scientists will increase. It will therefore be important to ensure that universities provide more data science profiles.

- o   Responsibility: MoE

- o   Time needed: 12-24 months

- o   Costs: Hard to evaluate as it largely depends on the capacities of teachers and their interests. Some capacity-building sessions may be needed, and external resources may also be needed to develop new curricula.

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372   http://www.thegovlab.org/

373   http://www.dlab.or.tz/

374   http://labs.webfoundation.org/

›   **Development of on open data module within the National Academy for Public Administration.** On the long-term, it will be essential that future high-level civil servants are aware of open data, its benefits and processes so that they can support the movement when they get in power. Academic courses on open data could also be integrated into continuing professional courses delivered through state management training programs.

  o   Responsibility: MoE

  o   Time needed: 12-24 months

  o   Costs: Hard to evaluate as it largely depends on the capacities of teachers and their interests. Some capacity-building sessions and external resources may also be needed to develop the module.

Tabular View

This section summarizes the Action Plan in a tabular view. Only short and mid- term actions are listed in this tabular view, as long-term actions are based on the evolution of the country context.

Vietnam OPEN DATA INITIATIVE			Y1												Y2												Y3				
Activities	**Resp.**	**Costs**	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	01	02	03	04	05
SENIOR LEADERSHIP																															
Short-Term Actions																															
Official public announcement of launch of Vietnam Open data Initiative	OPM	NA	▦	▦																											
Open Data Task Force	OoG	NA	▦	▦																												
Recruit the head of the OD Initiative	ODTF	NA	▦	▦	▦																											
Recruit the CIO/CTO of the initiative	ODTF	NA	▦	▦	▦																											
Design of the M&E plan	ODTF	20-30k	▦	▦	▦																											
Medium-Term Actions																															
OD institutional home for open data	ODTF	NA																										▦	▦		
OD Initiative Impact measurement	ODTF	50-60k																										▦	▦		

Vietnam OPEN DATA INITIATIVE

Activities	Resp.	Costs	Y1 04	05	06	07	08	09	10	11	12	Y2 01	02	03	04	05	06	07	08	09	10	11	12	Y3 01	02	03	04	05
LEGAL FRAMEWORK																												
Short-Term Actions																												
Develop an Open Data Legislation	ODTF	50 – 75 k				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓											
Update the Law on Finance to remove the fee regulation for data provision	ODTF + MoF	NA				▓	▓	▓	▓	▓	▓																	
Update the Ordinance of Protection of State Secrets	ODTF + MoPS	NA				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓											
INSTITUTIONAL STRUCTURES, RESPONSIBILITIES AND CAPABILITIES WITHIN GOVERNMENT																												
Short-Term Actions																												
Setup of a technical team	ODTF + ODCTO	TBD				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Change management Training & Communication campaign for high-level civil servants	ODTF + ODCTO	100 – 150k								▓	▓	▓	▓	▓	▓				▓	▓	▓	▓	▓					

Vietnam OPEN DATA INITIATIVE

Activities	Resp.	Costs	Y1 04	05	06	07	08	09	10	11	12	Y2 01	02	03	04	05	06	07	08	09	10	11	12	Y3 01	02	03	04	05
Training & Communication campaign for Access to information officers	ODTF + ODCTO	100 – 150k								�	▓			▓	▓			▓	▓			▓	▓					
Training & communication campaigns for data managers and IT personal	ODTF + ODCTO	200- 250k								▓	▓			▓	▓			▓	▓									
Design and development of a series of manuals of procedures	ODTF + ODCTO	20-30k				▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓											
Medium-Term Actions																												
Engagement of all ministries and agencies	ODTF	5 -10k/ session																							▓	▓	▓	▓
Setup of automatic publication mechanism	ODTF + ODCTO + Tech team	TBD																					▓	▓	▓	▓	▓	▓

Vietnam OPEN DATA INITIATIVE

Activities	Resp.	Costs	Y1 04	Y1 05	Y1 06	Y1 07	Y1 08	Y1 09	Y1 10	Y1 11	Y1 12	Y1 01	Y1 02	Y1 03	Y2 04	Y2 05	Y2 06	Y2 07	Y2 08	Y2 09	Y2 10	Y2 11	Y2 12	Y3 01	Y3 02	Y3 03	Y3 04	Y3 05
GOVERNMENT DATA MANAGEMENT POLICIES, PROCEDURES AND DATA AVAILABILITY																												
Short-Term Actions																												
Data Inventory	ODTF + ODCTO	50 – 70k	█	█	█	█																						
Centralization of existing data	ODTF + ODCTO + agencies	NA					█	█	█	█	█																	
Reference Data	ODCTO + ODTF + GSO	NA					█	█	█	█	█	█																
Medium-Term Actions																												
Development of advanced data services	ODTF + ODCTO+ tech team																					█	█	█	█	█	█	█
DEMAND FOR OPEN DATA																												
Short-Term Actions																												
Open Datathon	ODTF + ODCTO + MoST + agencies	20 -30k/ even																			█	█		█	█	█	█	
communication campaign targeting media, innovation sector and CSOs	ODTF	30 – 50k						█	█	█	█	█	█	█	█	█	█											

Vietnam OPEN DATA INITIATIVE

Activities	Resp.	Costs	Y1													Y2								Y3				
			04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05
Medium-Term Actions																												
Focus some of the MoST investment funds and competitions towards OD	ODTF + MoST																							■	■	■	■	■
FUNDING AN OPEN DATA PROGRAM																												
Short-Term Actions																												
Identify budget for all the activities of the action plan	ODTF	NA					■	■																					
NATIONAL TECHNOLOGY AND SKILLS INFRASTRUCTURE																												
Short-Term Actions																												
Develop a new Open Government Data Portal	ODTF+ ODCTO	NA				■	■	■	■	■	■																		

ANNEXES
List of Officials Met During Scoping Mission in Hanoi between 24 and 28 July 2018

The Office of Government

1. Mr Mai Tiến Dũng, Chairman
2. Mr Trần Khả Toàn, Director, Department of General Affair
3. Mr Hà Minh Mạnh, Director, Department of Business Innovation
4. Ms Phạm Thị Thanh, Director, Department of Internal Affair
5. Mr Lê Hoàng Tùng, Deputy Director, Department of General Economic
6. Mr Nguyễn Việt Hùng, Deputy Director, Department of Science, Education, Culture and Social Affairs
7. Mr Bùi Hữu Toàn, Deputy Director, Department of Organization and Personnel
8. Mr Nguyễn Ngọc Điệp, Director, Department of Industry
9. Mr Nguyễn Công Thành, Deputy Director, Center for Informatics
10. Ms Phạm Thúy Hạnh, Deputy Director, Department of Legal Affairs
11. Mr Vi Quang Đạo, General Director, Government E-Portal
12. Ms Nguyễn Thị Loan Office, Department of General Affair
13. Mr Ngô Hải Phan, Director General, APCA
14. Mr Nguyễn Nguyên Dũng, Deputy Director General, APCA
15. Mr Nguyễn Duy Hoàng, Deputy Director General, APCA
16. Mr Trần Quang Hồng, Head of Internal Affair, APCA
17. Ms Nguyễn Tuyết Minh, Deputy Head of Internal Affair, APCA
18. Mr Vũ Ngọc Dũng, Head of Science, Education, Culture and Social Affairs, APCA
19. Ms Nguyễn Thị Trà Lê, Head of General Economic, APCA
20. Mr Nguyễn Hùng Huế, Head of Economic Sector, APCA

21.   Mr Trần Văn Thư, Chief of Office, APCA

22.   Ms Chu Thị Thảo, Deputy Chief of Office, APCA

23.   Ms Lê Quỳnh Anh, Officer, APCA

24.   Mr Phạm Xuân Kiên, Head of Office, Ministry of Planning & Investment

25.   Mr Nguyễn Việt Hùng, Deputy Director, Department of Information Technology, Ministry of Finance

26.   Mr Nguyễn Quốc Hoàn, Deputy Head of Office, Ministry of Justice

The Administrative Procedures Control Agency (APCA)

1.   Mr Ngô Hải Phan, Director General, APCA

2.   Mr Nguyễn Nguyên Dũng, Deputy Director General, APCA

3.   Mr Nguyễn Duy Hoàng, Deputy Director General, APCA

4.   Mr Trần Quang Hồng, Head of Internal Affair, APCA

5.   Ms Nguyễn Tuyết Minh, Deputy Head of Internal Affair, APCA

6.   Mr Vũ Ngọc Dũng, Head of Science, Education, Culture and Social Affairs, APCA

7.   Ms Nguyễn Thị Trà Lê, Head of General Economic, APCA

8.   Mr Nguyễn Hùng Huế, Head of Economic Sector, APCA

9.   Mr Trần Văn Thư, Chief of Office, APCA

10.   Ms Chu Thị Thảo, Deputy Chief of Office, APCA

11.   Ms Lê Quỳnh Anh, Officer, APCA

Ministry of Justice

1.   Mr Trần Anh Đức, Deputy Director General, Department of General Affairs of Law Development

2.   Ms Nguyễn Thị Thu Hòe, Deputy Director General, Bureau of Inspection of Legal Normative Documents

3.   Mr Lê Anh Tuấn, Head of the Centre of Data and Statistics of Civil Judgment Enforcement

4.   Mr Nghiêm Hà Hải, Head of the Office of Bureau of civil status, nationality, authentication

5.   Mr Pham Quang Đại, Deputy Director of the National Judicial Record Centre

6.   Mr Đỗ Đình Lượng, Expert, Department of General Affairs of Law Development

7.   Mr Đàm Quang Ngọc, Expert, Department of General Affairs of Law Development

8.   Mr Nguyễn Chí Dũng, Deputy Director General of the Bureau of Information Technology

Ministry of Science and Technology

1.   Mr Đào Ngọc Chiến, Deputy Director General, Department of High Technology

2.   Ms Bùi Thị Liên Hương, Official, Department of High Technology

3.   Mr Phạm Hải Sơn, Deputy Director, Information Technology Centre

4.   Mr Nguyễn Ngọc Vinh, Official, Legal Department

Ministry of Finance

1.   Mr Đặng Đức Mai, Director General, Department of Financial Informatics & Statistics.

2.   Mr Nguyễn Việt Hùng, Deputy Director General, Department of Financial Informatics & Statistics.

3.   Mr Phạm Duyên Phương, Deputy Director, Customs IT and Statistics Department

4.   Mr Bùi Thế Phương, Director General, IT Department, State Treasury

5.   Mr Đỗ Quang Huy, Head of Software's Office, IT Department, State Treasury

6.   Mr Nguyễn Thế Huynh, Official, IT Department, State Treasury

7.   Mr Nguyễn Cương, Official, Department of Financial Informatics & Statistics

8.   Mr Hoàng Thành, Deputy Head of the Office of Public Services, Department of Financial Informatics & Statistics

Ministry of Information and Communications

1.   Mr Nguyễn Thanh Tuyên, Deputy Director General, Department of Information Technology

2.   Mr Hoàng Anh Tú, Deputy Director General, ICD

3.   Mr Nguyễn Đức Toàn, Official, Multilateral Cooperation, ICD

4.   Mr Bùi Thanh Tùng, Official, Department of Information Technology

5.   Mr Phạm Văn Thịnh, Official, Department of Information Application

Vietnam chamber of commerce and industry (VCCI)

1. Mr Đậu Anh Tuấn, Director of Legal Department

FPT

Mr Chu Khánh Hòa, Deputy General Director, Public Finance Sector

2. Mr Phạm Minh Tuấn, Director, New Technology Solution Centre

3. Steven Furst, Director of Strategy and Architecture, Public Sector

4. Mr Phan Thanh Sơn, Chief Technology Officer

Other agencies (Vietnam Initiative)

1. Mr Trần Ngọc Anh, Director

2. Ms Nguyễn Lan Hương, Country Representative

3. Mr Đặng Đức Anh, Senior Public Administration Specialist

4. Mr Khuất Tuấn Anh, Senior Public Administration Specialist

WB Team

1. Mr Sebastian Eckardt, Acting Country Director for Vietnam

2. Mr Đỗ Việt Dũng, Senior Country Officer

3. Mr Randeep Sudan, Advisor

4. Mr Oleg Petrov, Senior Program Officer

5. Ms Alla Morrison, Digital Development Officer

6. Ms Trần Thị Lan Hương, Senior Public Sector Specialist

7. Mr Kim Andreasson, ICT consultant

8. Ms Đinh Thị Hằng Anh, Team assistant

9. Ms. Reyn Anderson, Consultant

List of Officials Met During Field Mission in Hanoi and Ho Chi Minh City between 15 to 25 January 2018

The Office of Government (OOG)

1. Mr Mai Tiến Dũng, Chairman

The Administrative Procedures Control Agency (APCA)/OOG

1. Mr Ngô Hải Phan, Director General, APCA
2. Mr Nguyễn Nguyên Dũng, Deputy Director General, APCA
3. Mr Trần Quang Hồng, Head of Internal Affair, APCA
4. Ms Nguyễn Tuyết Minh, Deputy Head of Internal Affair, APCA
5. Mr Vũ Ngọc Dũng, Head of Science, Education, Culture and Social Affairs, APCA
6. Ms Nguyễn Thị Trà Lê, Head of General Economic, APCA
7. Mr Nguyễn Hùng Huế, Head of Economic Sector, APCA
8. Mr Trần Văn Thư, Chief of Office, APCA
9. Ms Chu Thị Thảo, Deputy Chief of Office, APCA
10. Ms Lê Quỳnh Anh, Officer, APCA

Ministry of Information and Communication

1. Mr Nguyễn Thành Phúc, Director General, Authority of Information Technology Application
2. Mr Nguyễn Thanh Tuyên, Deputy Director General, Department of Information Technology

Ministry of Science and Technology

1. Mr Nguyễn Quang Hưng, Deputy Director General, National Office of Intellectual Property

2. Mr Phạm Đức Nghiệm, National Agency for Technology Entrepreneurship and Commercialization Development

3. Mr Hà Quốc Trung, Director, Information Technology Centre

Ministry of Finance

1. Mr Nguyễn Việt Hà, Deputy Director, Department of Financial Informatics & Statistics.

2. Mr Bùi Thế Phương, Director General, Department of Information Technology, State Treasury

3. Ms Đặng Thị Dịu, Official, Department of Information Technology, State Treasury

4. Ms Vũ Thị Hậu, Official, Department of Financial Informatics & Statistics.

5. Mr Lê Thành Trung, Official, Department of Financial Informatics & Statistics.

6. Mr Nguyễn Việt Khương, Head of Unit, State Security Commission of Vietnam

Ministry of Planning and Investment

1. Mr Nguyễn Đức Tâm, Deputy Director General, National Business Registration Portal

2. Mr Phạm Thy Hùng, Director, Online Procurement Center, Public Procurement Agency

3. Mr Tuấn Linh, Head of Information Technology Unit, Online Procurement Center, Public Procurement Agency

Ministry of Public Security

1. Mr Ngô Quốc Phong, Deputy Director General, Department of Monetary Security

2. Mr Trần Hồng Phú, Deputy Director General, Police Department of Residence Registration and Management and National Population Database.

3. Mr Trần Đức Tuấn, Deputy Chief of the Office.

Ministry of Justice

1. Mr Nguyễn Chí Dũng, Deputy Director General of the Bureau of Information Technology

Ministry of Foreign Affairs

1. Mr Đoàn Thanh Song, Deputy Director, Information Center

Ministry of Natural Resources and Environment

1.   Mr Mai Văn Phấn, Director General, General Department of Land Administration

2.   Mr Trần Duy Hạnh, Head of Database Unit, General Department of Land Administration

Ministry of Transportation

1.   Mr Lê Thanh Tùng – Deputy Director – Information Technology Center

State Bank of Vietnam

1. Mr Lê Mạnh Hùng, Director General, Department of Information Technology

Ministry of Industry and Commerce

1.   Nguyễn Thế Quang, Deputy Director General, Department of E-commerce and E-economic.

Ministry of Education and Training

1.   Mr Tô Hồng Nam, Deputy Director General, Department of Information Technology

2.   Mr Nguyễn Trọng Duy, Official, Department of Information Technology

Vietnam Social Security

1.   Mr Lê Nguyên Bồng, Deputy Director, Information Center

Vietnam chamber of commerce and industry (VCCI)

1.   Mr Đậu Anh Tuấn, Director of Legal Department

Vietnam Initiative

1.   Mr Trần Ngọc Anh, Director

2.   Ms Nguyễn Lan Hương, Country Representative

3.   Mr Nguyễn Bá Hải, Senior Public Administration Specialist

4.   Mr Khuất Tuấn Anh, Senior Public Administration Specialist

Enterprises

1. Mr Nguyễn Thế Trung, Director, DTT Commercial Ltd., Company
2. Mr Võ Tấn Long, Director, E-banking Unit, VPBank
3. Mr Vũ Ngọc Anh, Director, AVSE Global
4. Mr Trương Anh Tuấn, Deputy Chairman, VFOSSA
5. Mr Steven Furst, Director of Strategy and Architecture, Public Sector
6. Mr Phan Thanh Sơn, Chief Technology Officer, FPT IS
7. Mr Nguyễn Thế Hùng, Director General Vinades
8. Mr Đồng Hoàng Nam, Unilever Vietnam
9. Mr Nguyễn Thanh Bình, Vietnam Textile and Apparel Association (VITAS)
10. Nguyễn Minh Hoàng, Ho Chi Minh WTO Affairs Consultation Center

Non-Governmental Organizations

1. Ms Trần Lệ Thúy Director, MDI Center
2. Ms Vu Hoang Duong, Officer, Oxfam
3. Ms Đỗ Hải Linh, Communication Manager, PanNature
4. Ms Hoàng Thị Hường, Coordinator, CEPEW

WB Team

1. Ms Alla Morrison, Digital Development Officer
2. Ms Trần Thị Lan Hương, Senior Public Sector Specialist
3. Ms Amira Karim, Senior Public Sector Specialist
4. Mr Seunghyun Kim, Senior ICT Policy Specialist
5. Mr Stephane Boyera, Advisor
6. Mr Kim Andreasson, ICT consultant
7. Ms Anh Thi Hang Dinh, Team assistant

ODRA Annexes

A.   Odra and OD4B Methodologies

The ODRA methodology used at the time of the assessment can be found here:

* Methodology (Version 3.1): http://opendatatoolkit.worldbank.org/docs/odra/odra_v3.1_methodology-en.pdf

* User Guide (Version 3.1): http://opendatatoolkit.worldbank.org/docs/odra/odra_v3.1_userguide-en.pdf

The OD4B methodology used at the time of the assessment can be found here:

* Methodology (Version 2.8) http://opendatatoolkit.worldbank.org/docs/odra/od4b_v2.8-en.pdf

* Annex 7: http://opendatatoolkit.worldbank.org/docs/odra/od4b_v2.8_annex7.xlsx

* Annex 8: http://opendatatoolkit.worldbank.org/docs/odra/od4b_v2.8_annex8.xlsx

Both methodologies are regularly updated based on feedback from peer reviews and various other pilots. Future versions will be available from http://opendatatoolkit.worldbank.org/en/odra.html

B.   Open Data for Business (OD4B) Report

Vietnam Findings & Recommendations

Disclaimer

The Open Data for Business (OD4B) Tool is intended to help inform a long-term strategy to increase the business use of government data. The representativeness of any OD4B assessment is dependent on the number and spectrum of companies and business groups interviewed. It is not a comprehensive or necessarily representative assessment of private sector use of government data in client countries. In some countries or circumstances, the OD4B Tool may not be the most appropriate approach to assessing the business environment for open data. The OD4B Tool is also not meant to provide an overview of all aspects of an open data program, which can be developed through an Open Data Readiness Assessment (ODRA) or other means.

Acknowledgements

The Open Data for Business team lead was Alla Morrison, Digital Economy Specialist from the World Bank. The principal author of this report is Stephane Boyera from SBC4D[375] . The overall planning, organization, and delivery of the assessment would not have been possible without the support of colleagues in Vietnam, in particular the World Bank Country Office team and the team from Vietnam Initiative who planned the meetings and supported the team during the visit. The team also thanks all participants in Vietnam that took part in roundtable conversations, individual interviews, or through field surveys. The insights and shared inputs contributed significantly to this report. The assessment participants are listed in Annex 1.

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375   http://www.sbc4d.com/

Executive Summary

The Open Data for Business (OD4B) Tool is a methodology to assess the private sector's current and potential use of government data in various countries. It is designed to increase the business use of government data through (1) increased private sector awareness of government data, (2) identification of high-value data and barriers to use, and (3) a recommended Action Plan to engage with private sector stakeholders on an ongoing basis.

The following findings and recommendations are based on interviews, questionnaire responses, and roundtable discussions during the field mission in January 2018, in Hanoi and Ho Chi Minh City. All the information collected has been aggregated and analyzed across four assessment areas – high value data, barriers, capabilities, and engagement. Each section of this document demonstrates both the spectrum of responses and overall trends.

Throughout the work in Vietnam, 36 private sector representatives were interviewed and participated in roundtable discussions about their interest and use of government data. Interviewees represented 11 sectors including Agriculture & food processing, Business and Legal Services, Data/Information Technology, Education, textile, Finance and Investment, Governance, Real Estate and Construction, Manufacturing, Research and Consulting, Tourism and Transportation and Logistics.

Vietnam's private sector stands to greatly benefit from a robust open data ecosystem. The vast majority of participants clearly understand the unique value of government data for business applications, and especially for market analysis. While there is already some use of government data for benchmarking growth and market sizing, many companies stated that they were interested in obtaining more granular, up to date, sector-specific information to identify new customers, support investment, identify new opportunities, or plan new products more carefully. However, participants also stated that there were many challenges in finding and accessing relevant and timely data in usable formats. Several participants shared experiences on the need to have personal network within agencies to access government data, on the challenges to access information scattered across heterogeneous web sites using heterogeneous hard-to-manage formats, on the poor quality of the data published, either outdated, or not disaggregated at a level that makes it useful. They spoke of extremely time-consuming processes for finding and obtaining information, and of the cost of some information (business registry, GIS information) sold by agencies. Many companies adopt trial and error methods for introducing new products or services or utilize alternative data channels for business intelligence such as buying data from external firms or conducting themselves data collection. Would the data be available, funding and capacities don't seem to be major barriers for their exploitation.

The assessment concludes that the further opening of granular government data has the potential to result in significant outcomes for the private sector. The recommendations section of this report details a series of next steps with associated activities, responsible ministries, and potential indicators to further develop the Vietnam open data ecosystem for business.

Summary of Findings

Assessment Area	Description
High Value Data	
Government data of greatest interest	Demographic/Census, Economic data, Finance data, GIS, national statistics
Most important characteristics of government data	Quality, Timeliness, Disaggregated
Importance of Government data for your business	3.30/5 - Average on 1 (poor) - 5 (excellent) scale
Capabilities	
Technical infrastructure available	3.67/5 - Average on 1 (poor) - 5 (excellent) scale
Data literacy and skills	3.67/5 - Average on 1 (poor) - 5 (excellent) scale
Capability of greatest interest	Technical skills training
Awareness of government data resources	3.25/5 - Average on 1 (not aware) -5 (very aware) scale
Barriers	
Most significant barriers	Difficulty finding data, Data is out of date or not specific enough
Impact on businesses	Cost to either buy data, or to run trial/error processes, delays in designing and launching new products/investments
Engagement	
Level of government responsiveness to data requests	3.31/5 - Average on 1 (poor) -5 (excellent) scale
Most effective outreach and feedback channels	Email, Public workshops

Introduction

The Open Data for Business (OD4B) Tool is a methodology to assess the private sector's current and potential use of government data in various countries. It is designed to increase the business use of government data through (1) increased private sector awareness of government data, (2) identification of high-value data and barriers to use, and (3) a recommended Action Plan to engage with private sector stakeholders on an ongoing basis.

From January 15 till January 25, 2018, a World Bank team conducted an Open Data Readiness Assessment (ODRA) in Vietnam, that included also an Open Data for Business Assessment with a focus on Ho Chi Minch City and, to a smaller extent, Hanoi. The objective of the assessment was to better understand the business demand for open government data along with the current barriers to use and opportunities for private sector engagement. Through interviews and a series of roundtable discussions with innovation centers, incubators, and the members of the Ho Chi Minh Chamber of Commerce and Industry (VCCI), the mission team met with close to 40 private sector stakeholders as part of this assessment.

This report was designed to be a practical resource for Vietnam government officials, data providers, and international organizations. The report summarizes key insights and recommendations from stakeholders to inform government data strategies and investments to meet the needs of the private sector by evaluating four key areas:

- High Value Data: The key data that businesses most need to expand into new markets, optimize operations, and develop customized solutions.

- Barriers to Use: The major obstacles that prevent data use and their impact on business such as lack of financing.

- Capabilities: The technical skills and financial resources required for businesses to leverage open data.

- Engagement Channels: The most effective ways the government can engage with the private sector on an ongoing basis.

Methodology

The Open Data for Business Assessment in Vietnam was based on the Open Data for Business (OD4B) Tool developed by the World Bank and the Center for Open Data Enterprise. The OD4B Tool takes a demand-driven approach to open data to inform recommendations and next steps to the government. The Tool assesses the private sector use of government data based on an examination of four areas: (1) high value data, (2) barriers to use, (3) private sector capabilities, and (4) engagement. Within each area, a series of questions provide further context on the business use of government data. These areas are assessed by collecting data through three channels: (1) Local Partner, (2) interviews, and (3) a roundtable discussion. The full

methodology can be found online as part of the World Bank Open Government Data Toolkit: http://opendatatoolkit.worldbank.org/en/odra.html

Participants

The Open Data for Business Assessment focused mainly on HCMC. Through interviews and roundtable discussions, 35 private sector stakeholders from 26 different organizations across 11 sectors participated. Participants were selected based on their current and/or potential use of open data, with a focus on data/information technology, agriculture, and manufacturing sectors.

Types of organizations included: SMEs (11), industry and trade associations (4), government ministries (3), large enterprises (14), multinationals (1), and incubators/Business centers (2).

Number of Organizations by Industry/Sector
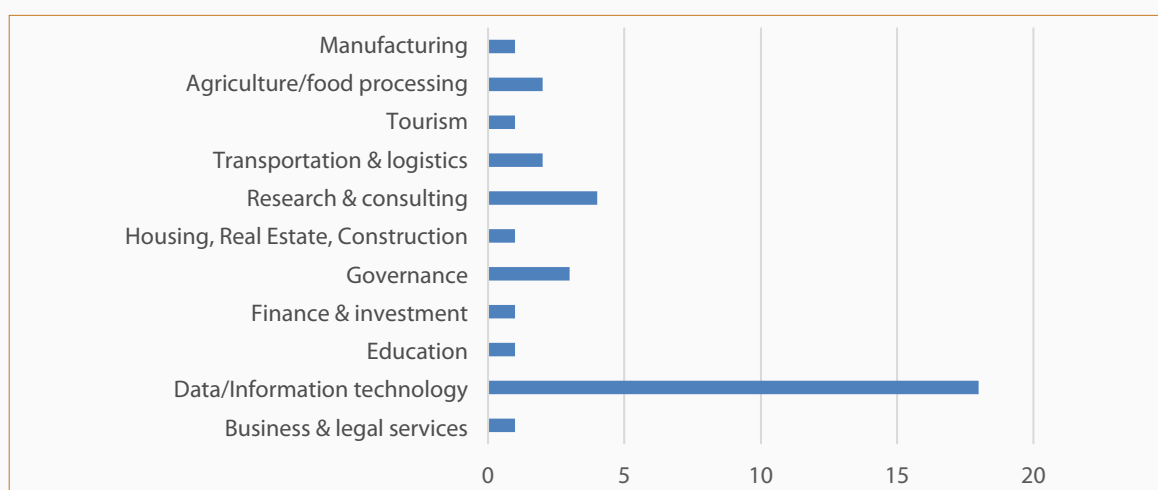
Key Findings

High Value Data

Current Information Use & Access

Based on the assessment, most companies use a range of sources to gather data needed to conduct their business. The most used source of information is government web sites, with more than 66% of the interviewees using them. More than 60% use internet searches. Almost 60% do their own data internal collection. More than 42% of the organizations use traditional media (radio/TV/Newspaper) and more than 42% use either their personal or their professional network. It is interesting to note that apparently lots of these data are used manually, as only 18% of the interviewees use techniques such as scrapping. Social media are not widely used, with only 30% of the organizations exploiting them to collect data.

Awareness of Government Data

Overall, businesses had some degree of awareness of the availability of government data relevant to their work. However, almost none were familiar with the open data concept and term, and very few are aware of issues regarding licenses and legal restrictions. Many stated that they don't trust data that is currently published, and the value is poor. On average, businesses seem to have a relatively good awareness of what government data is available at 3,25 on a scale of 1 (not aware) to 5 (very aware). This is aligned with the fact that 66% of interviewees use government web sites to access data. However, this data point does not fit well with qualitative feedback that underline the low usage of this data, and the difficulty to find data on government web site.

Demand for Government Data

Despite participants' relatively good awareness about the availability of government data in Vietnam, only about 27% percent rated the value of government data to their business as very or extremely valuable (4 or 5 on a scale of 1 (not at all) to 5 (extremely)). This reflect well the overall evaluation of the data quality provided by almost all interviewees.

Over 72 % of participants cited using data for new products development. More than 57% use data for research. 45% use data for organizational optimization and only 30% of the organizations use data to identify new customers and 24% for pricing.

Several businesses said that lack of reliable government data hinders investment and market development. For example, one company working in Tourism explained that without being able to accurately estimate internal and international tourism market size in Vietnam, they are not able to design products that are competitive compared to international offers made by major companies such as booking.com or hotels.com. It is important to note that a significant part of the people we met express the will to pay for good data, instead of relying on free low-quality data.

Most Requested Data Types

The following types of data were considered the most critical to business by participants:

- **Demographic and social:** Across the economy, businesses in every sector stressed the value of demographic and social data. Businesses explained Census data and household surveys were extremely valuable for market research, and for investment. Several companies explained that this information informs their investment in the development of new services (hotels, shops, transportation services) and their marketing strategy. Businesses underlined the importance of the details such as age groups, or income groups to inform strategies.

- **Business:** Business data including company register was the second most highly requested dataset by businesses. Businesses use the company register for identifying suppliers, clients, and distributors, as well as evaluating competition. Participants emphasized its value for conducting due diligence - to verify company existence, financials, directors, and other relevant information. Businesses across sectors also stressed the need for business-related legal data - especially information on licenses and relevant regulatory changes.

- **Economic:** A range of economic data were cited as being important to businesses; This includes in particular trade data, import and export data per sector, and per geographic location in Vietnam, tourism data for the tourism industry and transport data (what are services existing on different routes and the number of customers). The quality of data and its disaggregation level is critical for its usefulness, and for the ability for businesses to derive reliable strategies.

- **Agriculture & food processing information:** Businesses cited food safety certificates, food processors assessments. Some of them also cited crop and livestock productions in different areas to identify new suppliers

- **Geospatial:** Whether administrative, topographic maps or satellite data, businesses articulated the importance of being able to use geospatial - and especially land use data. This data is primarily used by agribusinesses, financial and real estate firms, transportation and logistics companies, and investors to identify potential investment prospects and get a better sense of development opportunities within Vietnam. One of the major barriers is the cost of GIS data sold by MoNRE

- **Government operations:** Regulations, Procurement and budgets are utilized to identify business opportunities, determine projections and inform investment decisions. These are especially useful if provided by sector and location. Several companies use budgets to understand government priorities, and procurement data to best position themselves when seeking a contract.

- **Tourism:** Given the importance of the tourism sector in Vietnam, the competition

between local and international operators, and the opportunities brought by not only international tourists but also national ones, there is a strong demand by local tourism operators (e.g. TM Group) to have detailed sector specific information in order to define their strategies and their investments. While tourism emerged as a need based on the interviews we had, it is clear that similar demand exists in other sectors where medium to large players are in demand of sector specific data to plan their growth for their benefit but for the benefit of the country at large.

Capabilities

Technical Infrastructure Available & Funding

Overall, businesses stated that they have the necessary IT infrastructure to operate: computers and access to broadband. The quality of international connectivity allows companies to use international cloud infrastructure (e.g. amazon AWS or alike) and local data centers. This aspect is not in any way a barrier for exploiting data.

In the same way, funding does not appear to be a main issue. More than 72% of the respondents have resources to exploit data and 70% of them declares that they can mobilize internal financial resources for that purpose.

Data Literacy and Skills

Data literacy and skills as well as technical skills do not seem to be a problem. The average data literacy and skills for businesses was rated by participants as 3,67 on a scale of 1 (poor) to 5 (excellent), for both technical skills and data literacy and skills and more than 60% (technical skills) to 66% (data literacy and skills) of the respondents evaluates their capacities as good or excellent (4 or 5).

Despite these good technical skills, more than 57% of the respondents would like to reinforce these skills. Only 15% are interested in data management and tools. While it does not appear clearly in the formal questionnaire (only about 10% cited the need in the "other" category), discussions showed that lots of people are interested in learning how and where to find reliable datasets they can exploit.

Barriers

Data is hard to find. More than 57% of respondents stated the difficulty in finding data as a critical barrier, one that results in the waste of significant resources. Several explained difficulties navigating government websites that are not homogeneous. For data not available on web sites, businesses described the process of obtaining data as very difficult if you don't know somebody or have a good network. The majority of business stated they were not aware about the newly launch Itrithuc portal (but it was only few weeks old at the time of the interview).

Data is not up-to-date. The most often-mentioned issue with government data in the survey: more than 60 percent of respondents cited this as a significant barrier to use.

Data is not specific enough. Almost 50% of the respondents mentioned this issue. The lack of disaggregation is a major barrier and covers both geographical dimension as well as sector dimensions. It was clearly stated by different businesses they are interested in detailed data on their sector and the information, like economic data is not disaggregated per sector. In the same way, the disaggregation at very low geographical level, like streets or areas is not available.

Interestingly, less 10% of the respondents mentioned the lack of relevant data. Only about 18% mentioned challenges related to format and about 12% mentioned issues with legal restrictions. On this element, the fact that it is not mentioned is more likely due to the lack of awareness on licensing aspect of data, rather than the fact that data are published with open licenses. Indeed, most of the data currently available are released without any license. It seems that there is a general understanding both at the government level and at the business level that when a dataset is published on a public website, it implicitly means that the license is open for reuse.

Cost of data. The cost of obtaining certain datasets, and especially geospatial data is a significant burden to businesses seeking to utilize this kind of data. While this was mentioned during a few interviews, it is interesting to note that only 15% of the respondents mentioned it in the barrier section of the questionnaire. More importantly a significant number of businesses express their willingness to pay for reliable accurate disaggregated data.

## Engagement

Level of Government Responsiveness

Government responsiveness is low and varies based on connections. Responsiveness was rated on average to be 3.31 on a scale of 1 (poor) to 5 (excellent). While about 50% of the respondent rated government responsiveness as 4 (no one rated 5), it is interesting to note that it is only large companies and government agencies. Government responsiveness is considered to be especially low by SMEs. During discussions and interviews, a large part of the organizations mentioned the need to know someone in an agency or have a good personal or professional network. The majority of interviewees mentioned that they don't even dare asking for data to agencies when those data are not available online and when they don't have a good network.

Few organizations mentioned that when data is obtained via a personal contact or a network, it cannot be shared and can only be used internally.

Most Effective Engagement Channels

Businesses cited their preferred channels to engage with government about data to be: public workshops and designated emails. Preferred engagement channels are presented in the graphic below.

Preferred Engagement Channels
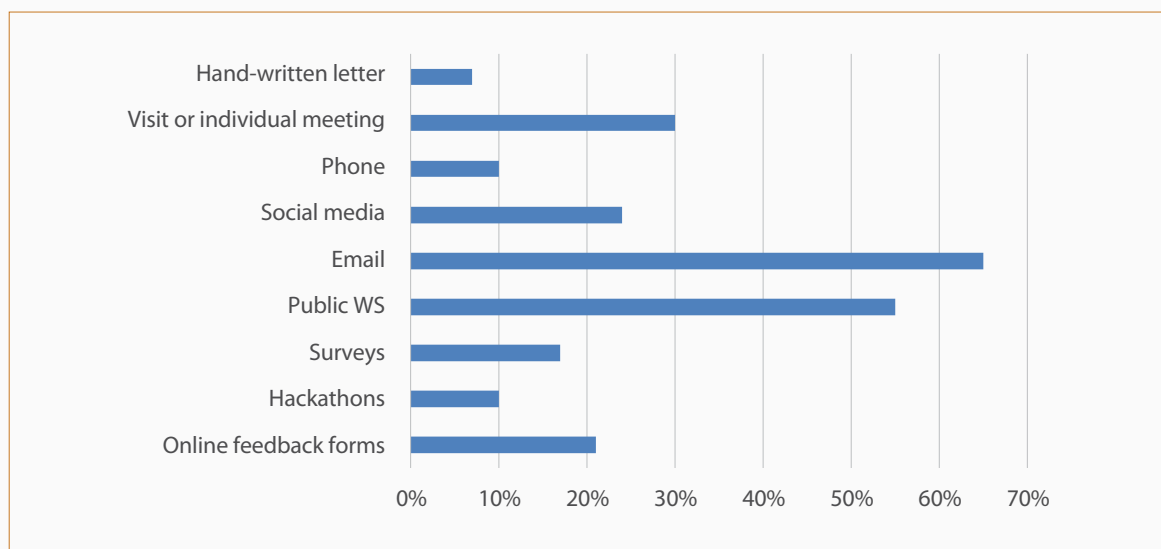
- **Public Workshops:** Public events is cited by 55% of the respondents as one of the most effective ways to engage with government agencies and get data. This is well aligned with the feedback related to the need to get a specific contact to get access to data.

- **Designated Emails: Emails is considered as the most effective engagement channel by 65% of the respondents.** Designated emails would enable them to submit data requests more easily, as well as be more informed about who to contact to obtain data. This relates again to the need to get a specific contact. It also relates to a few comments made by interviewees on the usual unresponsiveness of web forms on government web site.

Except those two channels, all other options are getting less support.

Recommendations & Next Steps

The recommendations below are aligned with the overall ODRA action plan but focuses specifically of OD for businesses.

Action	Description	Lead	Link to ODRA action plan
1. Prioritize release of high-value datasets for businesses	Census and population data disaggregated by age, sex, location and household income, available in machine-readable formats at no charge on the open data portal	ODTF	This action is related to all the activities of the ODTF for releasing data. The datasets mentioned here should be used to prioritize agencies involvement in the VODI.
	Economic data disaggregated by sector and by locations including tariffs, import and export data and commodity prices, available in machine-readable formats at no charge on the open data portal		
	Geospatial (administrative, topographic maps or satellite data, land use data) data available at no charge on the open data portal		
	Priority sector specific data (e.g. Tourism, agriculture, food processing) available in machine-readable formats at no charge on the open data portal		
	Businesses registry available in machine-readable formats at no charge on the open data portal		
2. Organize a communication campaign after release of a first series of datasets	After the release of a series of datasets mentioned above, organize, organize a communication campaign to promote reuse. The most efficient approach would be to use intermediaries such as VCCI, incubators, business centers or trade associations who are directly in contact with businesses and have already communication channels with them.	ODTF + VCCI + Incubators + business centers + trade associations	This is part of the proposed communication campaign in the short-term action plan, section demand for open data
3. Create open data business fora in major towns	It is essential for businesses to exchange experience on using government data, to share shining examples and use-cases, but also to identify challenges with existing datasets and high-value ones missing. It is also important for businesses to identify possible partners and resources available locally that can be hired or mobilized to exploit and take advantages of existing data.

Creating such fora in major town, both in the form of regular face-to-face events and online sites, will leverage data reuse and development of use cases, but will also create pressure on the ODTF to respond to the demand from businesses. | ODTF + VCCI + Trade Associations | This is related to the setup of a data innovation lab whose role is to coordinate the non-governmental actors, including businesses, and ensure that their needs are channeled to the ODTF and are addressed |

Action	Description	Lead	Link to ODRA action plan
4. Develop grant or seed funding program for the business use of government data	Create a fund for businesses to apply to for the concrete applications of open data. Projects may have specific applications relevant to government efficiency. MoST is already organizing competitions and manages funds that could be in part reorganized to promote use of OD by businesses. This will create shining examples that will in return convince other businesses to engage further with data and this will eventually lead to measurable social and economic impact.	ODTF + MoST	This is related to the action proposed in mid-term in the demand for open data section: Focus some of the MoST investment funds and competitions towards OD services and OD startups
5. Promote data sharing between businesses	Government data are in high demand, but many interviewees also mentioned other sources of data that might be useful from e.g. mobile operators' data to call center data, etc. It might be interesting to consider putting in place a platform to support the sharing of private businesses data on the model of the Opal platform (http://www.opalproject.org/) that offers algorithm and technics to anonymize data, but also offer ways to monetize data.	Future Data Innovation Lab	This is slightly outside the scope of the government intervention, but typically of the scope of the future data innovation lab whose role is to support businesses in data sharing and exploitation

C. Analysis of Datasets Available

This section lists datasets identified during the mission and the desk research and that could easily be published quickly on the Open Data portal.

Organizations	Links	Data	Format	License	Recommendations for publication of the OGD portal
The Ministry of Finance:	http://bit.ly/2XbzAAS	Estimation state budget reports of the 1st quarter, 1st half and the first 9 month	html and xlsx (link download)	None	**Quick win/ Priority**
		Public debts news	HTML & PDF	None	Low Value
		Foreign debts news	PDF	None	Low Value
		Annual Report	HTML	None	**Quick win/ Priority**
		Budget for Ministries, Government Agencies, Cities/ provinces and State budget.	HTML or xls	None	**Quick win/ Priority**
		Final account reports	HTML	None	**Quick win/ Priority**
		Annual State Budget reports	HTML	None	**Quick win/ Priority**
		State Budget reports for citizen.	HTML	None	**Quick win/ Priority**
Statistical office:	http://www.gso.gov.vn/	Wide data range from land, climate, education, economy, health, cultural…	HTML/PDF but also a data portal offering different export formats	None	**Quick win/ Priority**
Trade information portal:	http://www.vietnam-tradeportal.gov.vn/	Data includes trade agreements, legal documents, forms, instruction for government procedure	HTML &PDF	None	**Quick win/ Priority**
Department of survey and Mapping:	http://ban-dovn.vn/vi/ban-do-hanh-chinh-viet-nam/viet-nam-59220	Data includes map, geographical database	pdf. Depends on purchasing/ request	None	**Priority Longer-term**

Organizations	Links	Data	Format	License	Recommendations for publication of the OGD portal
Legislation	http://vbpl.vn/TW/Pages/Home.aspx	Data include legal documents which can be searched easily and arranged by years of issue or by type of documents.	Doc and PDF	None	**Quick win**
Ministry of Health	http://moh.gov.vn/province/Pages/ThongKeYTe.aspx	Annual summary of health statistic	PDF	None	**Quick win**
Ministry of education	http://www.moet.gov.vn/thong-ke/\Pages/thong-ke-giao-duc-tieu-hoc.aspx?ItemID=4043	Legal documents related to education and education statistic (in different level: preschool, elementary, middle school, high school and university)	PDF/Doc/XLS	None	**Quick win**
PAPI data	http://papi.org.vn/eng/documents-and-data-download	PAPI Reports and Data	PDF, HTML, PPT	Copyright	**Quick win**
Ministry of natural resources and environment	http://thongke.monre.gov.vn/	30 reports of 2014 in climate, sea level, total amount of ozone, ultraviolet ray, emission	XLS	None	**Quick win**/ **Priority**
Central Bank	www.sbv.gov.vn	Balance of International Payment	HTML		**Quick win**
		Total Liquidity	HTML		**Quick win**
		The result of open market operation auction	HTML		**Quick win**
		Settlement activities	HTML		**Quick win**
		Credit to The Economy	HTML		**Quick win**
		Performance of Credit Institutions	HTML		**Quick win**
		CPI Index, Exchange rate, Interest rate, Reserve Requirement, related legal documents	HTML		**Quick win** / **Priority**
		Annual reports	PDF		**Quick win**

Organi-zations	Links	Data	Format	License	Recommenda-tions for pub-lication of the OGD portal
Ministry of trans-port	http://mt.gov.vn/vn/Pages/Trangchu.aspx	Related legal documents	PDF	None	Low Value
		Procedure instruction	HTML	None	Low Value
		Annual reports	HTML	None	Low Value
Ministry of agri-cultural and rural develop-ment	www.mard.gov.vn	Legal documents	HTML and PDF/Doc	None	Low Value
National Data-base on admin-istrative proce-dure	http://csdl.thutuchanhchinh.vn/Pages/trang-chu.aspx	Administrative procedure	HTML	None	**Quick win** / **Priority**
National Biodiver-sity Da-tabase System	http://nbds.fimo.edu.vn/en/	List of protected area with info of each area	HTML	None	**Quick win**
		List of species sorted by protected area	HTML	None	**Quick win**
		Species information	HTML	Copy-right	**Quick win**
Ministry of trade and industry	http://eitdata.moit.gov.vn/portal/web/guest/trang-chu	Only report on Total retail sales of goods; Import and export; IIP Index on homepage.	HTML	None	**Quick win** / **Priority**
Ministry of Sci-ence and Technol-ogy	https://dulieu.itrithuc.vn/	Itrithuc Portal: Various datasets from different agencies	PDF/xls/json/zip/csv/html/doc	Mostly CC-by-NC 2.0	**Quick win**

Organizations	Links	Data	Format	License	Recommendations for publication of the OGD portal
Ministry of planning and investment	https://dichvuthongtin.dkkd.gov.vn/inf/default.aspx#	Business Registry: Information about registered companies	Available only via a user form	None	**Quick win** / **Priority**
Public Procurement Agency	http://muasamcong.mpi.gov.vn/main/index_en.html	Procurement data: Information about procurements	Available only via a user form	None	**Quick win** / **Priority**
	Not available	Tenders information			**Priority** **Longer-term**
	Not Available	Contracts and execution information			**Priority** **Longer-term**

The list above references data already published. There are also a series of data that are likely easy to publish but that are not available online yet. This includes in particular the data that is being gathered for national databases. The table below lists databases mentioned during the interviews or identified during desk research.

Databases	Recommendations for publication on the OGD portal
Population & demographic data	**Quick win**/**Priority**
Vietnam Social Security data	**Longer term**
Land database	**Quick win**/**Priority**
Public Finance database (include custom department and taxation department data)	**Quick win**/**Priority**
MoH registries (authorized medicines, official appointed doctors, health centers, pharmacies, etc.)	**Quick win**
MoE data (schools, exams results, etc.)	**Longer term**
MoT data	**Longer term**
MoPS data (e.g. traffic accident, crime data)	**Longer term**
MoNRE data (energy, environment, etc.)	**Priority Longer term**
Tourism data	**Priority**
Agriculture & Food processing data	**Priority**

DGRA Annexes

The DGRA methodology used at the time of this assessment can be found here:

- [DGRA Toolkit Guideline (as of December 2016)](#)

- [DGRA Toolkit version 11 (as of December 2016)](#)

The DGRA methodology has since been updated based on feedback from peer reviews and various other pilot assessments. The latest one can be found here:

- [DGRA Toolkit Guideline (as of October 2018)](#)

- [DGRA Toolkit version 16 (as of October 2018)](#)

Annex:
A Selection Of Relevant
International Examples

DGRA:

o   Leadership and governance references:

- Bahrain e-government authority[376]
- Singapore Smart Nation and Digital Government Office[377]
- UK Government Digital Service[378]

o   User focus references:

- United Kingdom Consultations[379]
- South Korea e-People portal[380]
- UK Government Digital Service[381]

o   Business process change references:

- Estonia X-road[382]
- UK Government Digital Service[383]

o   Capabilities, culture and skills references:

- Singapore government salaries[384]

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376   https://www.bahrain.bh/wps/portal/!ut/p/a1/rZLLbsIwEEV_BRZZBk9i8uouRZQW8aigtMQb5CQmSUnsEMyjf-18HVKmVoFCp3nl07vjeGSOC5ohwussSKjPBaV7fib14HINtmK7Zd_EMgz-2OxOvC0YPLAUE3wHAuFsDzr-Pz6pm2C7fpwRx2jKe20g-HAL57Pxm8PHQAevia_g0RRCIuS5migCViV4pK0nzBuAapKJgG620WrRp5xlcbD-WgotrJRc6ziBePyTKnuWEZZjIKlFzkGMKwzA6jetlisU2q6um2HsRdboQHY-0pw4fhXJzBl_JTiyhyPwG-DOg-GXfQTKqHPRieow_WPy_g3Lzd7Xa-KrFQku2UGi-T_tSL2d5CI8ftHA5yF2E0QqtmQVq1rbSpVTKcvNnQYa7P-f7ViJEkrNWJAoNzklSsVHmfpKoLGazwsUfer-7HI10Elr5buA3m5_UaeP8/dl5/d5/L2dBISEvZ0FBIS9nQSEh/

377   https://www.smartnation.sg/

378   https://gds.blog.gov.uk/2018/05/02/were-improving-the-digital-and-it-spend-controls-process/

379   https://www.gov.uk/government/publications?publication_filter_option=consultations

380   https://www.epeople.go.kr/jsp/user/on/eng/intro01.jsp

381   https://gds.blog.gov.uk/2014/04/01/a-year-in-the-making-the-digital-by-default-service-standard/

382   https://e-estonia.com/solutions/interoperability-services/x-road/

383   https://www.gov.uk/service-manual/service-standard/use-agile-methods

384   https://www.careers.gov.sg/build-your-career/career-toolkit/salary-and-benefits

- The South Australian Government flexibility for the future[385]
- United Kingdom government digital strategy[386]
- Sweden digital transformation[387]

o Shared infrastructure references:

- Philippines Government Cloud[388]
- Hong Kong SAR Cloud Strategy[389]
- UK Digital Government Service[390]

o Data driven references:

- United Kingdom Government Transformation Strategy[391]
- United States GAO[392]
- UK Digital Government Service[393]

o Cybersecurity, privacy and resilience references:

- European Union General Data Protection Regulation (GDPR)[394]
- United Kingdom National Critical Infrastructure[395]
- United States Critical Infrastructure Sectors[396]
- Government of Singapore awareness campaign[397]
- United States awareness campaign[398]

ODRA:

o Leadership references

- Briefing on Open data Declarations[399]

385   https://publicsector.sa.gov.au/people/flexibility-for-the-future/
386   https://www.gov.uk/government/publications/government-digital-strategy-action-3
387   https://www.government.se/press-releases/2017/06/action-on-digital-transformation/
388   http://i.gov.ph/govcloud/
389   https://www.ogcio.gov.hk/en/our_work/strategies/government/cloud_strategy/develop_gov_cloud.html
390   https://www.gov.uk/service-manual/service-standard/use-open-standards-and-common-platforms
391   https://www.gov.uk/government/publications/government-transformation-strategy-2017-to-2020/government-transformation-strategy-better-use-of-data
392   https://www.gao.gov/key_issues/data-driven_decision_making/issue_summary
393   https://www.gov.uk/service-manual/service-standard/report-performance-data-on-the-performance-platform
394   https://www.eugdpr.org/
395   https://www.cpni.gov.uk/critical-national-infrastructure-0
396   https://www.dhs.gov/critical-infrastructure-sectors
397   https://www.csa.gov.sg/news/press-releases/csa-launches-second-national-cybersecurity-awareness-campaign
398   https://www.dhs.gov/national-cyber-security-awareness-month
399   http://data.worldbank.org/sites/default/files/1/briefing-on-open-data-declarations-generic.doc

- Similar Declarations of Open data/Open Government[400]

- Government Digital Service in UK[401]

- Etalab in France[402]

- McKinsey Study on OD impact[403]

- EU report on OD economic benefits[404]

o Legal framework references:

- Open Data Policy:

  - Open Data Policy of the Government of Mexico (Spanish)[405]

    › ODI analysis[406]

  - France's Open Data Policy[407]

  - ODI guide on How to write a good data policy guide[408]

- Datasets maturity level:

  - Tim Berners-Lee 5 stars model[409]

  - ODI Maturity level[410]

- Licenses:

  - UK Government Licensing Framework[411]

  - Licensing Open data: A Practical Guide[412]

- Personal data protection:

  - EU Regulation 2016/679

  - Comparison of US and EU personal data protection legislations

o Institutional structures, responsibilities and capabilities within the government references

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400   http://data.worldbank.org/sites/default/files/1/declarations.pdf

401   https://www.gov.uk/government/organisations/government-digital-service

402   https://www.etalab.gouv.fr/

403   https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information

404   https://www.europeandataportal.eu/sites/default/files/analytical_report_n9_economic_benefits_of_open_data.pdf

405   http://www.dof.gob.mx/nota_detalle.php?codigo=5382838&fecha=20/02/2015

406   http://oldsite.theodi.org/open-data-enshrined-mexico-constitution

407   https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000034194946&categorieLien=id

408   https://oldsite.theodi.org/guides/writing-a-good-open-data-policy

409   http://5stardata.info/en/

410   https://oldsite.theodi.org/guides/maturity-model

411   http://www.nationalarchives.gov.uk/information-management/uk-gov-licensing-framework.htm

412   http://discovery.ac.uk/files/pdf/Licensing_Open_Data_A_Practical_Guide.pdf

- Mexico Open Data Squad[413]

- US Government Presidential Innovation Fellows[414]

- Tanzania Open Data Dives[415]

- EU Practical Guide for Data Managers[416]

- San Jose's City Administrative Policy Manual - Open Data Implementation Policy and Procedures[417]

- Open Data handbook[418]

o Government data management policies, procedures and data availability references:

- US Government Implementation guide for data inventory[419]

- Johns Hopkins University's Center for Government Excellence (GovEx lab) Data Inventory Guide[420]

- Data San Francisco's data inventory guide[421]

o National technology and skills infrastructure references:

- US Govlab[422]

- dLab Tanzania[423]

- Jakarta Open data Lab[424]

413 https://oldsite.theodi.org/case-studies/mexico-case-study-using-data-squads-to-jump-start-government-open-data-publishing

414 https://presidentialinnovationfellows.gov/

415 https://www.youtube.com/watch?v=7BXHv-JGPXQ

416 https://www.europeandataportal.eu/en/providing-data/goldbook

417 https://www.sanjoseca.gov/DocumentCenter/View/56784

418 http://opendatahandbook.org/guide/en/

419 https://project-open-data.cio.gov/implementation-guide/

420 http://labs.centerforgov.org/data-governance/data-inventory/

421 https://datasf.org/resources/data-inventory-guidance/

422 http://www.thegovlab.org/

423 http://www.dlab.or.tz/

424 http://labs.webfoundation.org/