

**DIGITAL COMPETENCIES OF PUBLIC OFFICIALS HOLDING PROVINCIAL
LEADERSHIP ROLES IN VIET NAM: FINDINGS FROM CASE STUDIES**

Identification and Engagement Phase

of

THE CITIZEN-POWERED INNOVATION INITIATIVE (CPII)

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EXECUTIVE SUMMARY

This report presents preliminary findings from a small survey of digital competencies of civil servants holding provincial leadership positions in Viet Nam. It is an output under the development work within [the Citizen-Powered Innovation Initiative](#), conducted by a research team from the Fulbright School of Public Policy and Management (FSPPM) at Fulbright University Viet Nam (FUV) and the United Nations Development Programme (UNDP) in July 2021. Participants in the survey included the heads (directors or deputy directors) of 9 provincial government departments from three provinces, Ha Giang, Thua Thien-Hue, and Quang Ninh. The report summarises contents of the eight teaching units in the 'Teaching Public Service in the Digital Age' (TPSDA) syllabus, which forms the underlying backbone of this survey and covers topics of '1. Digital Era Government', '2. Components of Digital Systems', '3. Iteration' (in designing and developing digital public services), '4. User-Focus and Design', '5. Data Uses and Opportunities', '6. Harmful Data Uses', '7. Working in the Open', and '8. Overcoming Legal, Financial and Organisational Barriers'.

Information collected from the survey revealed that civil servants holding provincial leadership positions in the three provinces have different levels of knowledge of different components of digital competencies in the TPSDA syllabus, depending on their domains of work. At the same time, the TPSDA syllabus was originally developed for and taught in countries with socio-political backgrounds different from Viet Nam's. The report reflects on these findings in its discussion and recommendations to the adoption of the TPSDA syllabus for capacity building on digital competencies for provincial leaders in Viet Nam. It is important to note that using Vietnamese case studies in teaching this syllabus would best help learners to relate to and understand the underlying theoretical framework. Our findings on the current digital competencies of provincial leadership are summarised below.

- Generally, the surveyed provincial leaders understood 'digital' as deploying information and communication technologies (ICT) in the public sector along administrative reforms in Viet Nam. Challenges in going digital identified by the surveyed leaders included institutional barriers, inadequate infrastructure and lack of suitable skill sets.
- There was a general understanding among survey participants that ICT infrastructure is composed of different elements/parts that are connected to serve respective functions that a provincial government department is charged with. Sharing and controlling of

information and resources among agencies are subjected to regulations. The concept of 'shared platforms' was consistently understood as synonymous with 'liên thông', which refers to the coordinated procedures among agencies at the same level ('horizontal procedures') or procedures among administrative levels ('vertical procedures').

- The top-down approach is commonly adopted among the provincial leadership in designing and developing digital public services. User experience and satisfaction was not yet an explicit objective in the design of digital public services. The agile (iterative) approach to project management was not a familiar concept to many of the provincial leaders. Existing regulations were identified as main obstacles to agile approach adoption. It is evidenced that the agile concept was aware of by a small group of provincial technocrats, especially those with an IT background. It also shows that with some innovative thinking among the civil service, the potential of the agile method can be applied in development of digital public services.
- Because public service delivery in Viet Nam follows a top-down approach, in which follow-ups and evaluation of users' experience are only done after the services are delivered, the adoption of user-focus design thinking to drive modifications to these services is hardly possible.
- Datasets collected and used by provincial government departments participating in this study were diverse. Primary use cases of these datasets were for monitoring performance and administrative reporting purposes. Data quality and lack of analytics capability were among key challenges identified by the provincial informants to making use of data. Datasets from different sources were being synchronised and standardised. However, the participants did not demonstrate the appreciation (at least not explicitly) of the challenges in doing so.
- All provincial informants reported either very little or very generically on issues related to risks associated with the current practices in data collection, management and analysis by local government departments. All provincial informants acknowledged that these security measures may affect the intended usability of public services and the needs for training on security measures and raising the awareness of emerging threats in the digital environment. However, they were not specific on the skill sets and capacity that these training would help build.

- The provincial informants identified the international integration, socio-economic development, and benefits for both government and people as a motivation for open government, but seemingly were not aware of two other critical motivations, which are the technological revolution and increasing demands from the people. They were aware of some of the benefits and risks of open governments but were not clear on how to make open government happen. They could also identify barriers related to institutions, people, administrative procedures and technology, but failed to describe the causes behind these barriers and strategies to overcome them.

We acknowledge that the sample size in this study was small, both in terms of the number of provincial government departments and the number of provinces participating in the survey, and that findings may not be representative of the overall level of digital competencies in all 63 provincial governments. The study's findings, however, may provide helpful insight in the design of future surveys and studies into the digital competencies in the public sector in Viet Nam.

1 'TEACHING PUBLIC SERVICE IN THE DIGITAL AGE' SYLLABUS

The 'Teaching Public Service in the Digital Age' (TPSDA) syllabus is a set of free and open access materials designed to assist educators in Master of Public Policy programs in teaching skill sets required by civil servants to effectively work and succeed in governments in the digital environment. The syllabus was developed by a core team of academics and practitioners coming from 10 countries to give its components a diverse and multinational perspective¹. The full TPSDA syllabus is available on its website at <https://www.teachingpublicservice.digital/>.

The syllabus, comprising 8 units, provided materials to help current and future civil servants, at almost all levels of seniority and in all administrative units, to acquire a minimum level of skill sets to operate in the digital environment of the public sector. Full justifications of these [Digital Era Competencies](#) are available on the TPSDA website and are recited below:

- "Values the experience of service users, and can collaborate with specialists to understand user needs, then design, test, and adopt effective solutions."
- "Can anticipate and mitigate the privacy, security and ethical risks that are inherent to governing in a digital era."
- "Understands the need to blend traditional public service skills with modern, digital skills, and can effectively work within and lead multidisciplinary teams."
- "Understands the importance of iteration and rapid feedback loops, and can create a working environment that can continuously learn and improve outcomes."
- "Can identify the opportunities to improve government operations, service delivery or policy making, and can overcome structural and institutional obstacles to change."
- "Can use a range of techniques and tools to make the government more open, collaborative and accountable."
- "Understands how to use data to inform decisions, design and run services, and create public value inside and outside government."

¹ Credits go to the TPSDA syllabus authors listed at <https://www.teachingpublicservice.digital/en/syllabus-authors>

- "Understands the current and evolving affordances of digital technologies and can assess how they can be used to improve public outcomes."

It is worth noting that each unit in the syllabus does not directly and squarely match with each of the competencies. Rather, the learning outcomes from each unit will equip learners with various aspects of more than one competency.

This section provides a summary of the 8 units in the TPSDA syllabus. The 8 thematic issues form the backbone of the survey of digital competencies of provincial leaders in Viet Nam in this study. They are and also the reference points for our recommendation of a syllabus for teaching these competencies to leadership in the public sector in Viet Nam.

1.1 Unit 1. Digital era government

This unit sets the tone and lays out the context of being a digital government. Started around 2010 and characterised by digital or agile culture, digital government is believed to be the latest in the wave of public administration philosophies. This digital culture is in stark contrast with the previous philosophies including New Public Management (NPM), Taylorism, and Weberism.

The new public management focuses on government efficiency by applying best management practices from the private sector in the 1980s and 1990s. Preceding the NPM was the Taylorism management paradigm, which highlights scientific standards, inflexibility and precision in government operation with the aim to boost productivity. Before that was the Weber bureaucratic management theory that dominated the public administration sphere in the early 20th century. Weber advocated a rule-based, specialised and impersonal layers of organisation whose characteristics are still seen in today's public sector.

If paper, printing and texts shaped governing approaches, rules, and identity of government in the past, technology defines this latest wave of digital government. It is more than just a tool but an environment in which the government operates. The weight of paper-based governance mentality has indeed caused some governments to interpret digital transformation as going from paper forms to Portable Document Format (PDF) files.

Operating in the digital era, digital government must adopt “culture, practice, processes and technologies of the Internet-era to respond to people’s raised expectations”². The success of digital government therefore will depend on creation of a new set of public administrative activities, not specific outcomes as usually thought of.

There are several challenges that face governments moving into this new digital mode. First, they often lack understanding of capacity and contexts of target communities that may use digital services. Limited digital capabilities in government is another problem as operating in this new environment requires a multidisciplinary approach that goes beyond technicalities. Underlying any digital service is a web of rules, culture, norms and infrastructure that should be observed, questioned, and changed if needed. Finally, public concerns need to be incorporated into the design of a digital solution to ensure its success, a practice that is very different from the existing standard of operation in governments.

1.2 Unit 2. Components of digital systems

This unit relates to Competency 8 about the affordance of technologies be it established or emerging. The ultimate use of technology is to effectively serve the purpose for which it is deployed. It is imperative to understand that a technology system is made of different components that are combined and connected through a “stack” or a “system”. These components are separable and of varying qualities and maturities. Understanding this would help a public manager make right technology choices by using appropriate decision-making frameworks which might be different than commonly used in the public sector.

Because of the nature of technological change, digital components evolve and become obsolete quickly. Thus, a system should not be designed as a monolithic unit and contracted to one vendor. Focus should be put on building a common, sharing foundation or standards where different components are built upon, connect, and operate. An expensive legacy information technology (IT) system and vendor dependency therefore will be avoided. This is where the idea of government as a platform emerges.

This platform-based thinking is critical in the digital era. Governments operate in functional departments with their own bureaucracies, policies, and culture. While their missions and

² <https://defradigital.blog.gov.uk/2017/11/13/what-we-mean-by-digital/>

resources may be different, they do share some functions underlying their performance, for example, validating citizen identity, and collecting and distributing funds. These functions therefore can be built using software intermediary such as API as a shared resource or platform to facilitate collaboration across government, avoiding redundancy and thus saving costs for each department while still helping it achieve its mission. This platform will open more opportunities to outsourcing digital components to diverse vendors, making them closer to users and customised to meet users' specific needs.

Another key learning of the unit is that digital products used in public service face different requirements than that from the private sector. Reasons are the web of rules, culture, politics, and norms existing in the traditional operation of the public sector.

1.3 Unit 3. Iteration

Government officials and civil servants have long been trained for and practicing top-down approaches to project management in developing and delivering public services. These approaches have been favoured because they make it convenient for a project manager and provide clarity to a project's timeline and resources, as well as the responsibility and accountability of individual civil servants participating in the project. With governments historically being the primary drivers behind civil and military engineering projects, these conventional project management methods, through extreme detailed upfront planning, have been appropriate because the governments can better control (with minimal risks) the execution of these projects.

The last couple of decades have seen an increasing number of government services relying on software. By applying the top-down approach in designing and delivering of these services, detailed planning and engineering of the software features (among other technicalities) have been done prior to actual software development. While this approach may work for services operating in stable and controlled environments, it has reportedly resulted in unsatisfactory services, especially those requiring a high degree of interactions with the public. The primary reason behind such a failure is that the top-down upfront planning approach has been rigid and incompatible with the complexities introduced by complex computer-based systems, the rapid changes of technology and the inherently rapid changes of people's expectation of the user-friendliness and efficiency of these electronic services.

An alternative approach to project planning and management is the agile approach, which is based on the premise that projects (i.e. government services) operate in dynamic environments and that constant learning from the environments (including the services' users) and rapid improvements are key to addressing unpredictable problems inherent to most citizen-facing electronic public services. More generally, the agile project management principle assumes that the development and delivery of good user-focused services, electronic or not, is never complete but continually improved to keep up with rapidly changing technologies and users' expectations.

This unit aims to equip civil servants with the following knowledge of practices and technologies in order to rapidly and continually improve government services and policies.

- Differentiating and explaining the two approaches to project management, agile versus waterfall, including situations in which each approach is more suitable, common tools and techniques used in each approach, and consequences when not using a suitable approach in a specific situation.
- Describing characteristics of 'Fake Agile' projects in which the overall governance matches the agile description but not the practices or, more importantly, the impacts.
- Understanding differences between project management versus product management.

1.4 Unit 4. User focus and design

As user focus will determine the success of public services in the digital age, this unit mainly addresses Competency 1 "Digital Era Government". There are four basic arguments supporting the thesis of this unit.

First, due to the diversity of people that public services aim to serve, it is far from easy to design services and products that provide satisfactory experience to all. This diversity can be in terms of backgrounds, contexts, and differences in needs and problems faced by people who must use a public service or product. As a result, it is highly possible that products and services may not work for their potential users.

Second, many real-world examples³ show that user-focused designs can help reduce administrative burdens to both people and government in terms of time and money. The burden often comes from bureaucracy, complicated regulations, and confusing procedures. Understanding and meeting users' needs require a change in the overall attitude of public managers. There have been several well-designed and proven practices of user-centred design methods⁴. These skills and practices can be applied by civil servants to create service and product based on the user's needs. This will help navigate government processes, making them more accessible, simpler, and inclusive.

Finally, government failures happen because policies are developed without taking into account potential impacts on people outside of the bureaucracy. Results would be costly projects and waste of scarce resources. Human-centric approaches will help avoid this, by filling understanding gaps between ideas in drawing boardrooms and those they influence in real life.

1.5 Unit 5. Data: uses and opportunities

Governments have been collecting data and making decisions based on data (to different degrees) for a long time. The census or household travel surveys are typical examples. The digital era has posed challenges to this endeavour, including

- the rapid growth in both volume and variety of data collected.
- the lack of required data skills to mine the wealth of such data and create public values, which were not developed as part of the standard statistical and economic training received by an average public servant.
- the increasing number of decisions being made automatically based on artificial systems fueled by such wealth of data. This poses the risks of harmful and discriminatory decisions if such systems are not properly built, tested and monitored, implying new responsibilities not familiar to many governments.

³MyBenefits CalWIN case in [Hacking Bureaucracy: Reimagining California's Food Stamp Program In The Digital Age](#), HKS Case Study. More real cases can be found in Carol Righi and Janice James (2007) *User-Centered Design Stories*. Morgan Kaufmann Publisher.

⁴ <https://www.interaction-design.org/literature/topics/design-thinking>
<https://www.designkit.org/resources/1>

- openly and appropriately sharing data produced by the governments, which is valuable to businesses, citizens and the society.

This unit aims to equip civil servants with knowledge to identify opportunities and challenges in making use of data to solve government problems, including the following learning objectives

- Types of data collected by governments in the digital era
- Typical classes of cases of data use in governments
- Determining the patterns of problems that data analytics can assist for improving policy making and public service delivery (data for decision making).
- Understanding of the civic data life cycle, benefits and challenges in standardising and sharing data between government departments and with the public (data as infrastructure)
- The roles and responsibilities of civil servants in collecting and using data in governments (data is political).

1.6 Unit 6. Data: Harmful uses

While data can drive governments to success, misuse of data may cause harm to ordinary citizens, the society and the governments themselves. Such misuse may be intentionally or unintentionally and may happen in

- data collection (e.g. under-representation of data of particular demographic cohorts),
- data management (e.g. unauthorised access to and/or unethical use of data by government and non-government actors), and
- data analysis (e.g. a lack of algorithmic auditing to identify and remove biases introduced in algorithms or inaccurately evaluating the appropriateness of an analytical model for decision making).

Effectively identifying and mitigating these harms requires that governments have capacity and skill sets in different areas, including but not limited to digital security skills, data ethics, data auditing, data aware procurement and contracting skills, algorithmic auditing skills, and regulatory skills. At the same time, inconsiderately implementing measures to mitigate these risks and harms may inadvertently limit the intended usability of the government public

services those measures intended to protect. In other words, they may cause harm in trying to prevent harm. For example, over-protection (in cybersecurity) may render social benefits inaccessible (electronically) by certain groups of vulnerable citizens.

This unit aims to equip civil servants with an understanding that data created, collected, managed and analysed by governments may be misused or overlooked, intentionally or unintentionally, and may cause harm to the people in different ways. The learning objectives include

- Being aware of different types of harm governments may inflict on the people via their decisions in relation to collecting, managing and using data.
- Knowledge of some of the actions governments can take to minimise these harms
- Being aware of trade-offs in implementing these actions, e.g. they may diminish the intended usefulness and accessibility of public services or policies they are protecting.

1.7 Unit 7. Working in the open

The main purpose of this unit is to help learners understand the trends of “working in the open” and “open government” in the digital era, the motivation of these trends and what governments should do to respond to them with the following learning objectives.

- Understanding why governments have been increasingly open. Specifically, civil servants should be able to distinguish concepts of ‘open government’, ‘working in the open’ (and concepts that are commonly used in Viet Nam, such as ‘transparency’, ‘grassroots democracy’, ‘privatised/socialised’, ‘participatory’, ‘inclusive’, ‘supervised by the people’). They should also demonstrate an understanding as to why governments have been increasingly more open, and key motivations for open governments.
- Understanding the differences between closed government (characterised by official secrets, cryptography, and/or security services for instance), non-digital transparent government (characterised by official statistics, parliamentary records, and/or maps for instance), and open government in digital area (characterised by interactive websites, social media, smartphone apps, blogs, and/or open data).
- Assessing advantages (benefits) and disadvantages of working in the open.

- Recommending steps that the government team could take to work more in the open, and the likely barriers they will face.

1.8 Unit 8. Overcoming legal, financial and organisational barriers

This unit aims to clarify the common barriers to changes in governments, particularly in the digital era and equip civil servants with knowledge to identify pathways to overcome those barriers through the following learning objectives.

- Identifying the most common types of barriers and their causes to general changes or reform (both digital and non- digital) within governments, e.g. legal, budgetary, procurement, cultural, psychological, auditing, human resource matters.
- Explaining the impacts of the digital environment on these barriers.
- Analysing cases that demonstrate attempts by civil servants to overcome barriers to successful digital-era public services.
- Identifying solutions to help overcome barriers to digital era change in a government context

2 EVALUATING DIGITAL COMPETENCIES OF PROVINCIAL LEADERSHIP IN VIET NAM

2.1 Survey design

In order to gather information on digital competencies of provincial leadership, we conducted surveys and in-depth interviews with the head of provincial departments in Ha Giang, Thua Thien-Hue, and Quang Ninh in July 2021. Details of provincial departments participated in our digital competencies evaluation in these provinces are in Table 1. The two provinces which had participated in our field studies for the Citizen-Powered Innovation Initiative, Tay Ninh and An Giang, were also invited but declined to participate in the digital competencies evaluation.

The questionnaire used in the survey and in the in-depth interviews is in Appendix A. It was tested on a provincial government official (from the Department of Internal Affairs of Da Nang) who provided inputs into translating the questions into administrative language and making them more understandable to the provincial leadership participating in the survey. The questions are grouped into sections corresponding to units described in Section 1 and were

designed to evaluate the digital competencies of civil servants holding provincial leadership roles against the learning objectives of each of these units.

Table 1. Provincial departments participating in the digital competencies evaluation

	Ha Giang	Thua Thien-Hue	Quang Ninh
Centre for Public Administrative Services (CfPAS)	Answering survey questions and participating in in-depth interviews.	Participating in in-depth interviews.	Answering survey questions and participating in in-depth interviews.
Department of Information and Communication (DIC)	Answering survey questions and participating in in-depth interviews.	Participating in in-depth interviews.	Answering survey questions.
Department of Internal Affairs (DIA)	Answering survey questions.	Answering survey questions.	(Not participating)
Department of Planning and Investment (DPI)	Answering survey questions and participating in in-depth interviews.	(Not participating)	(Not participating)

Questions in Section 1 of the questionnaire (Section 1 in the Appendix A) aim to evaluate the understanding of relevant provincial leaders of different government models and what they evolve into in the digital era. This is particularly relevant to Viet Nam as the central government has declared objectives in the transformation into digital government, including ‘Providing high quality public services to the people’, ‘Mobilising the participation from the people and business community’, ‘Leveraging digital technologies to optimise government efficiency’, and ‘Effectively addressing pressing social economic issues in healthcare, education, transportation and other areas.’

Questions in Section 2 of the questionnaire (Section 2 in the Appendix A) aim to evaluate the understanding of relevant provincial leaders of components of digital systems employed by the governments in delivering public services. The underlying platform connecting these components is considered the prerequisite for successful digital transformation of the public sector.

Questions in Section 3 of the questionnaire (Section 3 in Appendix A) aim to evaluate the understanding of project management approaches and their practices by the provincial

leadership in the development and continuing improvement of digital public and government services.

Questions in Section 4 of the questionnaire (Section 4 in the Appendix A) aim to evaluate the understanding and current practices by provincial leaders of principles of user-design in public services. A key characteristic of the digital era is that end-users play an important role in the design of public services. A well-designed public service would not only satisfactorily address people's needs but also help governments save costs in fixing potential problems in the future and improve the government's overall efficiency.

Questions in Section 5 of the questionnaire (Section 5 in Appendix A) aim to evaluate the understanding of and current practices by the provincial leaders in recognising the potential use cases of data in solving local social-economic challenges and in informing the policy making process. Data could be understood as structured (e.g. traditional tabulated data from the census or surveys) or unstructured (e.g. free texts, images, audio and video recordings).

Questions in Section 6 of the questionnaire (Section 6 in Appendix A) aim to evaluate the understanding of and current practices by provincial leadership in recognising risks involved in the process of collecting, storing, managing, and analysing data when developing and deploying digital public and government services and in policy making.

Questions in Section 7 of the questionnaire (Section 7 in Appendix A) aim to evaluate the understanding of provincial leaders of governments operating in the open (or 'open governments'). 'Open governments' are characterised by transparency, shared resources and active exchanges of information between government departments, between governments and businesses and people. It should be noted that 'open' is not synonymous to sharing all government information with the public but doing so in accordance with laws and regulations.

Questions in Section 8 of the questionnaire (Section 8 in the Appendix A) aim to understand if and how provincial leadership overcame barriers (if any) in transforming the administration in local governments, especially in relation to the use of digital technologies

2.2 Survey findings

2.2.1 Digital era government

Generally, the surveyed provincial leaders understood 'digital' as deploying information and communication technologies (ICT) in the public sector along administrative reforms in Viet Nam. ICT application was mainly referred to as improving computer skills for government officials, equipping offices with computers and other hardware, setting up email systems, internet connection and digitisation of documents by scanning (going paperless).

Coupled with public administration reforms, ICT will help improve transparency and shorten public service processing time. With the national plan to reach full e-government capacity in 2020 and become a digital government in 2025, digital technologies or web-based approaches will help realise that goal. Key tools that help realise these goals are email, internet, web-based service, digital signature, application. Efforts also include bringing in new technologies such as Artificial Intelligence (AI), cloud computing, and big data.

Purposes and objectives of using digital are to be modern, to improve efficiency and transparency, and to reduce bureaucracy. Also, less direct interaction with citizens means less petty corruption. Other goals include solving the problem of scattering data and supporting administrative reforms. Digital transformation in brief will help the Government of Viet Nam achieve its e-government target with 100% public services delivered online (e-government) and work to become a digital government by 2025.

There are many challenges that the surveyed respondents mentioned as they maneuver between old ways of doing government business and reaching digital aspiration. These included institutional barriers (laws, regulations, bureaucratic culture, etc.), infrastructure (e.g. hardware, software, and budget), and skills (IT/ICT, management, critical thinking, problem solving skills, and interpersonal skills). They generally agreed that transformation depends on the pace of public administration reforms.⁵

5 In other words, ICT and digital technologies are means to achieve the goals of public administrative reforms of modern and efficient administration. The more vigorous administrative reforms are, the faster digital transformation is to help achieve their goals.

2.2.2 Components of digital systems

At the provincial department level, there was a general understanding that ICT infrastructure is composed of different elements/parts that are connected to serve respective functions that a provincial government department is charged with. Components are difficult to replace because of compatibility requirements. Sharing and controlling of information and resources among agencies are subjected to regulations. One provincial department head interestingly mentioned people as part of the digital system that plays an important role in designing it.

Regarding the concept of 'Government as a Platform', a provincial department head described it as a government service platform (GSP) where API is integrated allowing development and access to other components such as local software.

When talked about shared platforms, some surveyed provincial leaders repeatedly mentioned the term "liên thông" or inter-sector/inter-level, which refers to the coordinated procedures among agencies at the same level ('horizontal procedures') or procedures among administrative levels ('vertical procedures') (Prime Minister's Decision 93/2007). In the surveyed provinces, 'liên thông' is in fact the practice of sharing digitised documents among departments and at the same level of administration. It also means web-based communication and exchanges of information. Overall, it aims to speed up processing and saving printing costs.

2.2.3 Iteration

The top-down approach is commonly adopted among the provincial leadership in designing and developing digital public services. As described by an informant from Ha Giang's Centre for Public Administrative Services, the process commonly starts with a directive from the central government, such as the Government's Office, to develop a public service, followed by a detailed planning of the project's undertaking by relevant provincial departments. The testing of the final product was not part of the service's development, at least not until the end.

User experience and satisfaction was not yet an explicit objective in the design of digital public services. Even though almost all provincial leadership agreed on the importance of end-user inputs to continual improvements of public services (digital or non-digital), their answers revealed that the services were only tested by the end-users (ordinary citizens and businesses)

once completed. Importantly, their responses did not demonstrate the existence of an official and effective mechanism for accelerated and continuous collection of users' experiences with public services and their quality and incorporating the findings when looking for solutions to improve the services.

The agile approach to project management was not a familiar concept to many of the provincial leaders. Seven out of nine of provincial department heads participating in our evaluation were unaware of this approach, except for those of the DIC of Thua Thien-Hue and of the DIC of Ha Giang, likely because of their background in the software development industry from which the agile method originates. It is also noteworthy that four out of five of the participants did not answer questions related to their participation in managing the development of digital public services, referring to this as the primary responsibility of the DIC in their province.

Existing regulations were identified as main obstacles to agile approach adoption. As pointed out by the head of the DIC of Ha Giang, the design of a (digital) public service project, including its detailed budgeting and allocated resources, must be approved by the top provincial leaders before implementation. Any changes to the original design (especially if coming with changes to the approved budget and resources) must strictly follow the current administrative procedures to be re-approved by the top leadership. This reportedly hindered motivations for the adoption of an agile approach, which embraces rapid updates to the project design for best end-users' experience and satisfaction.

The head of the DIC of Thua Thien-Hue reported a rather innovative work-around to this regulation hurdle in order to embrace the agile spirit in their development of Hue-S, a multi-purposed mobile app for residents to report situational problems in their localities to the provincial authorities. Acknowledging the risk of low uptake of the app if being irrelevant or user-unfriendly, the development team of Hue-S at the DIC of Thua Thien-Hue started with a simple version of the app and invited the top provincial leaders who are not 'tech-savvy' to test-use it and provide comments for improvements. Their rationale was that if the app were considered user-friendly by the leadership (after necessary adjustments following their comments), it would be so to the (majority of the) public.

The head of the Centre for Public Administrative Services of Quang Ninh also reported that they tested and incorporated feedback from the Centre's staff members into the design of the Centre's service offerings before introducing them to the public to ensure best customers' experience.

Even though these practices were far from being genuinely agile, which requires continuous testing and incorporation of user-inputs into the design of a service over the project lifetime, it is evidenced that the agile concept was aware of by a small group of provincial technocrats, especially those with an IT background. It also shows, with some innovative thinking among the civil service, the potential of the agile method to be applied in the development of digital public services.

2.2.4 User-focus and design

Public service delivery in Viet Nam follows a top-down approach. Decision is made top down under the forms of decrees or decisions (e.g. Decree No. 45/2020⁶, Decree No. 61/2018⁷, and Decision No. 1254/2018⁸). Development and implementation will be carried out at lower administrative levels, including follow-ups and evaluation after services are delivered. Modification is hardly possible along this process.

There are two kinds of users in the public service context. Public officials and civil servants are the first group who directly use ICT (e.g. software and mobile apps) as means to provide, process and approve public services and improve performance. The other are citizens who access public services via those ICT means. For official users, once an app or software is developed, training is provided so that they can use them to perform their jobs. For citizen users, a satisfaction survey is conducted after their interaction with those apps or web-based services.

Regarding accessibility, local Centres of Public Administrative Services are set up before the launch of the national e-government program. They exist to serve citizens in need of direct

⁶<https://thuvienphapluat.vn/van-ban/cong-nghe-thong-tin/nghi-dinh-45-2020-nd-cp-thuc-hien-thu-tuc-hanh-chinh-tren-moi-truong-dien-tu-426372.aspx?v=d>

⁷<https://thuvienphapluat.vn/van-ban/Bo-may-hanh-chinh/Nghi-dinh-61-2018-ND-CP-co-che-mot-cua-mot-cua-lien-thong-trong-giai-quyet-thu-tuc-hanh-chinh-357427.aspx>

⁸<https://thuvienphapluat.vn/van-ban/Xuat-nhap-khau/Quyet-dinh-1254-QD-TTq-2018-Ke-hoach-hanh-dong-thuc-day-Co-che-mot-cua-quoc-gia-395645.aspx>

contacts or to help fulfill requirements. The centres are also for public services that can't be digitalised due to technical or legal reasons. These include services that require numerous supporting documents with graphics, blueprints or maps, or those in the restricted areas (like land or conditioned business) that require direct interaction.

While the findings on this topic of user focus are limited to provincial level and from a number of department representatives who participated in the survey, they are indeed in line with findings from a recent joint report by the Government of Vietnam and The World Bank on Digital Government and Open Data Readiness released in Feb 2019. In this report, among seven key dimensions under the Digital Government Readiness Assessment (DGRA), the awareness and practices of 'user focus' in policy design in Viet Nam is coloured yellow, which means 'evidence of readiness is less clear'⁹.

2.2.5 Data: uses and opportunities

Datasets collected and used by provincial government departments participating in this study were diverse. The Centres for Public Administrative Services in the three surveyed provinces have collected, managed and analysed datasets and detailed information of all administrative procedures received at the Centres. The data includes departments and specific civil servants responsible for processing these procedures, their status (if in process), the processing time, the paperwork required, and the satisfaction of the people or businesses upon receiving results of these procedures. Data related to all civil servants working in the provincial government were collected and managed by the provincial DIA. Meanwhile, datasets used by provincial DPIs were mostly secondary, e.g. macro socio-economic data collected by the General Statistics Office. The DIC of Thua Thien-Hue reported on managing data collected from different sources, including video feeds from traffic and security cameras, hard copies and soft copies of paperwork from administrative procedures at all administrative units across the province, and the usage details of shared software (“phần mềm dùng chung”) by departments.

Primary use cases of these datasets were for monitoring performance and administrative reporting purposes. For example, the Centre for Public Administrative Services used their data

⁹World Bank; Government of Vietnam. 2019. *Digital Government and Open Data Readiness Assessment*. World Bank, Washington, DC. © World Bank.
<https://openknowledge.worldbank.org/handle/10986/32547> License: CC BY 3.0 IGO.

for classifying groups of administrative procedures by processing time by department and by individual civil servants, identifying and reporting delinquent procedures to relevant departments and to top provincial leadership for improvements. There are reportedly other typical use cases of data that they presumably were not fully aware of and not implementing in their department, for example to inform policy design, to understand citizen needs and behaviours, and to identify and prevent new problems.

Datasets from different sources were being synchronised and standardised. DIC of Thua Thien-Hue reported on building a shared database of the data collected from various sources aforementioned and creating APIs for future sharing of these datasets between government departments, and possibly (and selectively) with the public. With regards to video feeds from traffic and security cameras, raw images are kept instead of only information extracted from those images (e.g. the number of people or vehicles). While this practice requires a much larger storage capacity, it allows the DIC to preserve the raw data for future use cases (e.g. monitoring the condition of road traffic infrastructure over time) which otherwise would be impossible.

However, the provincial informants did not demonstrate the appreciation (at least not explicitly) of the challenges in synchronising and standardising datasets. An example of such challenges was standardising data from different departments without fully understanding how the data was used in each department, leading to potentially reduced usability of the standardised data by different groups of users, and not securing buy-in from different stakeholders.

Data quality and lack of analytics capability were among key challenges identified by the provincial informants to making use of data. Issues related to data quality included inconsistent, nonsynchronous and detached datasets coming from different systems (software) and sources, e.g. especially between central government ('vertical') departments and provincial government ('horizontal') departments, and between different administrative units (via their 'one-stop shops'). Civil servants lack advanced analytic skills to effectively and efficiently handle and analyse large and complex datasets. Many data processing tasks have been done almost manually (e.g. with spreadsheets), which, combined with the above data quality issues and large data volume to be processed, resulted in long data cleansing and processing time and likely inaccurate analyses.

While citing analytics capability as a key challenge to making full use of data in local governments, the provincial informants did not demonstrate the awareness of typical/common patterns of problems that data analytics can assist, which would inform the development priority of analytics skill sets in their department. Regarding data quality, they did not demonstrate the understanding of steps in the complete data cycle from data generation, data management, to data analysis and communications, and how certain datasets would tend to be of lower quality than others, which in turn would affect the decision on which datasets should be standardised.

Inadequate IT infrastructure, e.g. aging desktop computers and unstable and slow internet connections, were also pointed out as challenges to effectively using data in provincial governments.

Finally, the provincial informants *did not demonstrate (at least not explicitly) the understanding of challenges in ensuring that data is collected, analysed, communicated, and used for decision making* in an impartial and unbiased manner. These challenges can be of technical nature (e.g. biases in machine learning algorithms), ethical nature (e.g. selecting participants in a survey), or operational nature (e.g. low participation of user satisfaction feedback at 'one-stop shops').

2.2.6 Data: Harmful uses

All provincial informants reported either very little or very generically on issues related to risks associated with the current practices in data collection, management and analysis by local government departments. They acknowledged that such risks existed but did not provide specific real-life examples of those risks, especially at their departments.

The DIC in each province was reportedly responsible for providing security measures and training to other departments. Indeed, the heads of DIC of Thua Thien-Hue and Ha Giang gave more specific details on measures such as the use of digital signature, One Time Password (OTP) and multi-layer security currently deployed in their provinces to mitigate these risks.

All provincial informants acknowledged that these security measures may affect the intended usability of public services. The Centre for Public Administrative Services in Quang Ninh gave an example of the low adoption rate of online public services, partly attributed to the multi-layered security requirements that discourage new users. These security requirements were

then relaxed to attract more users and gradually re-imposed as people became more familiar with them and aware of their benefits.

All provincial informants also acknowledged the needs for training on security measures and raising the awareness of emerging threats in the digital environment but were not specific on the skill sets and capacity that these training would help build, and how these new capabilities will help mitigate those risks at their departments.

2.2.7 Working in the open

The provincial informants identified international integration, socio-economic development, and benefits for both government and people as a motivation for open government. However, they did not look at two other critical motivations, which are the technological revolution and increasing demands from the people. They also did not make clear distinction between open government and other governance trends in Viet Nam, such as ‘socialisation’ or privatisation, ‘People know, people discuss, people do, people supervise’ (‘Dân biết, dân bàn. dân làm, dân kiểm tra’), ‘Grassroots democracy’ (‘Dân chủ cơ sở’).

The informants provided very high-level answers on the differences between closed government, transparent government, and open government but did not give details on their differences in terms of goals, methods, openness, and being people-oriented. They could describe certain benefits of open government, e.g. cost and time-efficiency, user-friendly, professional governance, and transparency. However, they appeared to be concerned with problems associated with open government, especially in security, e.g. tasks and regulations, information leakage, abuse of information for anti-government activities, and privacy risks.

Other benefits of open government pointed out by the informants included the value of open data that can engage the public in designing open tools and software for better public governance, enhancing accountability for the government, and facilitating a shared digital platform for connecting government operation and all levels (similar to ‘Government as a Platform’).

The informants gave very general answers on how to make ‘open government’ happen, but instead provided comments on how to handle the above-mentioned costs and benefits related to infrastructure, technological application, guidelines from central government, and social media. Importantly, they were not aware (or at least not answering explicitly) that the

key point is in changing the mindset before building open government, and in improving digital governance in the digital environment.

2.2.8 Overcoming legal, financial and organisational barriers

The informants identified certain types of barriers related to institutions, people, administrative procedures and technology, but did not describe constraints related to cultural environment, legislation, budget, procurement, and/or auditing. Notably, they did not clarify the causes of these barriers. They also gave generic answers, such as subject to management, the need for improving performance and a change in management styles, about the impacts of the digital environment on these barriers.

Recommendations by the provincial informants to overcome these barriers include changes in the leadership and in improving civil servants' skill sets through training, accountability, inter-department collaboration in provincial governments by adopting and leveraging digital technologies. Such recommendations, however, were neither specific nor comprehensive.

3 RECOMMENDATION ON A SYLLABUS FOR TEACHING DIGITAL COMPETENCIES TO PROVINCIAL LEADERSHIP

Survey information presented in Section 2.2 reveals that provincial leaders have different levels of knowledge of different components of digital competencies in the TPSDA syllabus, depending on their domains of work. At the same time, the TPSDA syllabus was originally developed for and taught in countries with different socio-political backgrounds to Viet Nam. This section reflects on these findings in discussing and giving recommendations to the adoption of the TPSDA syllabus for teaching digital competencies to public officials and civil servants in Viet Nam. It is important to note that *using Vietnamese case studies in teaching this syllabus would best help learners to relate to and understand the underlying theoretical frameworks of digital transformation.*

We acknowledge that the sample size is relatively small, both in terms of the number of provincial government departments and the number of provinces participating in the survey, and that findings may not be representative of the overall level of digital competencies in provincial governments. The preliminary findings in this study may provide helpful insight in

the design of future surveys and studies into the digital competencies in the public sector in Viet Nam.

We conducted two consultation workshops with the provincial leadership of Thua Thien Hue and of Ha Giang to report on our survey findings and recommendations of a syllabus to teach digital competencies to public officials and civil servants in Viet Nam. Key takeaways from the provincial leadership's feedback in these workshops are below.

- The training should include two separate programs, the Executive Leadership Program targeting the top leadership (i.e. members of the Provincial Party Standing Committee), and the Management Leadership Program targeting the mid to high-level management in the provincial governments (e.g. Director or Deputy Director of provincial government departments, and Chairperson of districts).
- Training materials should be based on case studies which are current local digital transformation challenges, and not too technical nor excessively IT related so that they are more relevant and useful to non-technical audiences.
- User-centred design and data uses and opportunities are the topics that attract great interests from the leadership in both provinces.

3.1 Digital era government

Understanding how public administration philosophies evolve over time is critical. It helps learners grasp the context, culture and values shaped by these philosophies, and identify areas of change when needed. While government bureaucracy development in Viet Nam does not strictly follow the path experienced by most western countries, it resembles some of the characteristics of those waves.

Whether Weberian bureaucracy exists in modern Viet Nam is unclear because the country adopted the Soviet governance style right after its independence in 1945. However, one can easily find characteristics of the NPM in current government practices. These were introduced as best governance practices by international donors and multilateral organisations such as the World Bank (WB), the International Monetary Fund (IMF), and the Asian Development Bank (ADB), which later were incorporated into national public administration reform programs during the reform periods of 1990s and 2000s.

The idea that IT does not play an important role in public services may not be strictly the case in Viet Nam. Following the country's openness to the world economy and trade, information technology was quickly recognised as important means both in private and public sectors. While IT application in public services varies from place to place and at different levels of administration, it was articulated in government official documents and programs as early as the 1990s, and since then has become an integral part of the Government of Vietnam's public administrative reforms throughout the 2000s.

Likewise, with internet connection in the late 1990s, ICT was considered a critical sector in the economy and government business. As a result, Viet Nam chose to adopt and work to build e-government, with a plan to grow into a digital government by 2025. Unit 1 thus fits well into this local context as it provides government business continuity and explains why public services are in current forms and their future development.

The teaching of this unit should equip public officials and civil servants with the knowledge described in learning outcomes of Section 1 of the TPSDA syllabus, which are recited below.

- Understanding what 'digital' means and why governments want to make use of digital technologies.
- Identifying 'digital era challenges' that governments may face and capabilities they should develop to succeed
- Understanding the values the digital era's government would bring to the other government practices.

3.2 Components of digital systems

Unit 2 is also relevant to deliver in Viet Nam's context. Even though the country has made good records in reforming and operating its economy following some market-based mentality, relics of centralised planning remain in its bureaucratic structures which are characterised by vertical organisations and compartmental operations. The application of ICT during administration reforms has led to siloed systems operated by ministries and sectors that are hardly shared or connected.

Understanding that digital systems are made of components which are connected and of various maturity is critical for the whole government's human resources. This will help avoid

traps of wasteful legacy systems when deployment depends on one or two vendors to supply the whole system. The fast-changing technological environment of the digital era magnifies this problem.

Similarly, the concept of government as a platform is crucial in reshaping both the government mentality and actions as the public sector seeks to transform to fit in the digital age by 2025. This mindset will help solve compartmental operations of IT systems in government and eliminate wasteful IT projects that rely on one or a few suppliers of IT systems.

The teaching of this unit should equip public officials and civil servants with the knowledge described in the learning outcomes of Unit 2 of the TPSDA syllabus and recited below.

- Understanding that digital systems are made of components, which are connected and need to be compatible with each other, to solve problems.
- Understanding that these components may be of different qualities and maturities, that they change over time, that it is difficult to replace a component once deployed, and that governments can make choices about which ones to deploy.
- Understanding the principles of the vision of ‘Government as a platform’.

3.3 Iteration

In reference to the learning objectives of Unit 3 of the TPSDA syllabus (Section 1.3), our evaluation provides evidence that public officials and civil servants had no or little knowledge about the nature and the needs of applying an agile (iterative) approach to developing digital public services, except for those with a background in IT. Therefore, most of them could not demonstrate any understanding and knowledge related to the iterative approach as outlined in the learning objectives in Section 1.3.

The teaching of the iterative approach to project management in the digital era should equip public officials and civil servants with the knowledge described in the learning outcomes of Unit 3 of the TPSDA syllabus and recited below.

- Understanding the nature of the top-down (waterfall) approach and of the agile/iterative approach to project management, i.e. the differences between project management versus product management, and between planning-focus versus learning-focus in design and delivering public services.

- Being clearly aware of and able to identify the contexts and conditions in which each approach is more advantageous and should be adopted.
- Implications when adopting a wrong approach, especially the waterfall approach, in designing and delivering public services.
- Understanding that the primary responsibility of local government leaders is to accelerate (1) the learning (of their team) of the public service quality and (2) the necessary improvements regardless of the approaches.
- Implications when adopting the agile/iterative approach to processes including planning, budgeting, developing and testing hypotheses (about the unknown unknowns), and identifying the required roles in an agile team.
- Understanding the principles and the implementation of a specific agile/iterative methodology from a manager's perspective in the government context.
- Understanding potential organisational constraints to practicing agile in the government context and the ability to explore ways to overcome them.

3.4 User-focus and design

As indicated in Unit 2, the user-focus concept hardly exists in the current system of public service delivery in Viet Nam for several reasons. First, there are existing regulations and administrative procedures that bound the ways public services are delivered. These regulations and procedures are designed based on administrative and functional structures of the bureaucracy.

When e-government is promoted in Viet Nam, a simplified or misunderstanding of digital transformation leads to a focus where printing documents are digitised to make PDF files, convenience in sharing and archiving. As a result, the delivery of most existing public services is the same in terms of steps, requirements, and procedures. What is different is the way they are delivered, either web-based via e-government portals or hybrid when final steps require the physical presence of service users. Web-based delivery is applicable only to services that require a limited number of supporting documents to be scanned and within a limited uploading size.

The user-focus concept, for some informants, is to make it more convenient for people to access public services at home from a computer and scanner through the Internet instead of having to go to a local government office to do it. Also, a service is understood as “user-centric” when its users, as required, rate their satisfaction with the service.

As such, the concepts of “iteration” and “user-focus” are hardly applicable. However, when it comes to policy implementation which depends on street bureaucrats' understanding of local contexts and their constituent needs, this concept proves critical. The same case can be true when a new policy is formulated to meet new citizen demands. Unit 4 is therefore a critical component of the syllabus.

The teaching of this unit should equip provincial leadership with the knowledge described in the learning outcomes of Unit 4 of the TPSDA syllabus and recited below.

- Understanding of the needs to have good designs of public services, of what defines a good design, and of why a bad design is costly and counterproductive.
- Describing the human-centric designing methodology and the related practices and techniques, and their potential applications in the public policy context.
- Skill sets required in a team to apply a human-centric design to solve or to improve a public service.
- Understanding and applying an appropriate method to investigate a problem, to learn about a public service or policy and to propose how the service or policy can be better delivered with professional support.
- The meaning and the importance of accessibility.

3.5 Data uses and opportunities

As our survey findings suggest, the teaching of this unit should equip public officials and civil servants with the knowledge described in the learning outcomes of Unit 5 of the TPSDA syllabus and recited below.

- Types of data collected by governments in the digital era
- Typical classes of use cases of data in governments

- Understanding of key challenges that governments may face when making good use of data
- Determining the patterns of problems that data analytics can assist for improving policy making and public service delivery (data for decision making).
- Understanding of the civic data life cycle, benefits and challenges in standardising and sharing data between government departments and with the public (data as infrastructure)
- The roles and responsibilities of civil servants in collecting and using data in governments (data is political).

3.6 Harmful data uses

Since all informants focused on risks from cyber threats, without mentioning risks related to misuse or overlooking from the governments in collecting, managing and analysing data of people, they appeared to be unaware of capabilities, beside technical knowledge in cybersecurity, to help governments effectively mitigate against the above risks. The teaching of this unit should equip provincial leadership with the knowledge described in the learning outcomes of Unit 6 of the TPSDA syllabus and recited below.

- Understanding of types of harms that governments can inflict on people in making decisions related to collecting, managing and analysing data.
- Actions governments can make to minimise those harms, for example, having a diverse and multidisciplinary team in identifying and solving complex problems, anticipating vulnerabilities in digital systems and services via the use of ‘threat modelling exercises’, procedures to identify and rectify these harms, and procurement processes and standards to minimise unfair use of government data by suppliers and third parties.
- Capabilities that could effectively help governments to mitigate against those risks, including skill sets in data ethics, data auditing, data aware procurement and contracting skills, algorithmic auditing skills, and regulatory skills.

We note that the responsibility of designing and deploying IT solutions, more specifically data systems and cybersecurity measures, for a provincial government and its departments rests

on its DIC. It is worth it that heads of provincial government departments other than those of DICs are equipped with the knowledge to be provided in this unit. This is to raise the awareness among provincial leaders of potential threats from digital systems and help them contribute meaningfully from their use-case perspective to the design and deployment of cybersecurity measures.

3.7 Working in the open

We suggest changes to learning objectives of this unit in the TPSDA syllabus to make it more suitable and familiar in the Vietnamese context. Specifically, instead of explaining why governments have been traditionally closed, we propose to explain why governments have been increasingly open. This approach will be more receptive, understandable and educational to Vietnamese civil servants. Also, the concepts of ‘working in the open’ or ‘open governments’ are relatively new in Viet Nam. We propose that these concepts be introduced by comparing them with concepts related to governments that were more popular in Viet Nam, such as ‘grassroots democracy’, ‘transparent’, and ‘supervised by people’.

In summary, the teaching of this unit should equip provincial leadership with the following knowledge.

- Understandings of concepts of ‘working in the open’, ‘open government’ and of why these concepts have become increasingly popular.
- Understanding the difference between the above concepts and related concepts that are more familiar in Viet Nam, for example, ‘participatory’, ‘inclusive’, ‘socialisation’ or privatisation, ‘People know, people discuss, people do, people supervise’, ‘Grassroots democracy’.
- The costs and benefits of working in the open.
- How to work in the open (understanding that changing the mindset is critical before doing open government), how to improve governance in the digital environment in the big picture, and how to handle the above-mentioned costs and benefits.

3.8 Overcoming legal, financial, and organisational barriers

As informants gave very generic answers to our survey questions regarding these barriers, we propose that the teaching of this unit should equip them with the knowledge described in the learning outcomes of Unit 8 of the TPSDA syllabus and recited below.

- Understandings of barriers to reforms in government and of constraints and their causes, including cultural environment, legislation, budget, procurement, and auditing.
- Impacts of the digital environment on these barriers.
- Lessons learned from success stories, and analysis of success factors from the learners' own cases or from examples that they are aware of.
- Solutions to these barriers, especially those that are applicable to Viet Nam.

APPENDIX A

Questionnaire of Survey on Digital Competencies of Provincial Leadership in Viet Nam

1. Digital era governments

Questions in this section aimed to evaluate the understanding of provincial leadership of different government models and what they evolve into in the digital era. This is particularly relevant to Viet Nam as the Central Government declared objectives in the transformation into digital government, including 'Providing high quality public services to the people', 'Mobilising the participation from the people and business community', 'Leveraging digital technologies to optimise government efficiency', and 'Effectively addressing pressing social economic issues in healthcare, education, transportation and other areas.'

Question 1. The public administration in Viet Nam has gone through stages of transformation. What do you think of the role of Information Technology in this process?

Question 2. How is Information Technology being used in the public administration in your province? What are the main purposes of this application of Information Technology?

Question 3. How do you think the digital environment will impact the governments' operation, especially in delivering public services to the people?

Question 4. How information technology is playing a role in the governments' operation?

Question 5. Why do governments use technologies, information technologies in particular?

Question 6. Which department in your provincial government is responsible for the design and deployment of technology solutions?

Question 7. How do you understand concepts of 'digitalisation', 'digital technology', 'digital services', 'electronics' and 'e-government'?

Question 8. What does 'digital transformation', which is currently widely used in Viet Nam, mean in the context of governments?

Question 9. What are transformed in 'digital transformation' and to serve what purposes?

Question 10. Please list your expectations when technologies are applied in the governments?

Question 11. In the context of provincial governments, which services should be digitalised, what are the pathways and is there a priority to services to be digitalised?

Question 12. Please describe challenges in applying technologies in governments. The challenges can be of organisational, human, structural nature or from the citizens.

Question 13. What capabilities should the public sector develop to operate and thrive in the digital environment?

Question 14. Does the nature of interaction and collaboration between government departments change in the digital environment? Please give an example of an administrative procedure before and after digital transformation.

2. Components of digital systems

Questions in this section aimed to evaluate the understanding of the provincial leadership of components of digital systems employed by the governments in delivering public services. The

underlying platform connecting these components is considered the prerequisite for a successful digital transformation of the public sector.

Question 1. What are the components of an IT system or a digital system? Please give an example of recent development of an online public service.

Question 2. What are the functions of these components?

Question 3. How are these components linked to each other, in terms of technical, policy, operational, and management viewpoint?

Question 4. In your opinion, can each of these components easily be replaced? How is the compatibility and interoperability between these components ensured?

Question 5. Is the digital ecosystem developed by the government or outsourced to a third party? If it is the latter, was the work outsourced as a whole or by components?

Question 6. Was the IT system developed on an existing platform? If yes, please describe this platform.

Question 7. Why does each government department have its own IT system? Do you think the IT resources in governments have been effectively shared between departments and used to its capacity?

Question 8. What is a platform? Why is platform required? Please give an example of a platform in your organisation.

Question 9. What is 'connectivity' ('liên thông') and what are its purposes? What are the subjects of connectivity? Do you think connectivity is an example of a platform? Does connectivity help reduce the redundancy of IT systems in governments?

Question 10. 'Government as a Platform' is becoming a standard for governments in the digital environment. What does 'Government as a Platform' mean?

Question 11. How have digital resources been shared within your provincial government and between the government with the public?

Question 12. Does your government measure the effectiveness of such sharing and based on which metrics?

Question 13. Does the policy making process or the process to deliver public services change when using digital technologies? Why and why not?

3. Iteration

Questions in this section aimed to evaluate the understanding of project management approaches and their practices by the provincial leadership in the development and continuing improvement of digital public and government services.

Question 1. Please give an example of a project developing digital public services that you helped manage over the last 2 years, specifically.

- What was the service?
- What tools/techniques did you use to manage the project?
- Who was in the project team?

- How often did the project team meet?
- How was the project scheduled?
- How was the service designed, developed and tested?
- Was the service a success, based on which criteria?
- What were the challenges you faced in managing this project?

Question 2. What were the roles of end-users in the service that you developed in Question 1? Specifically

- Who were the end-users?
- How were specifications from end-users inputted into the design of the service?
- Were feedback from end-users continuously collected and incorporated into the design and development of the service? How often was the feedback collected?
- Were end-users' satisfaction a component of the project deliverables and evaluation?

Question 3. What do you know of the agile (iterative) approach to project management? Specifically

- Did you hear of this approach?
- If yes, did you apply this approach in managing the project in Question 1?
- Besides the agile approach, are you aware of other approaches to project management?
- What are the major differences between these approaches?

4. User-focus and design

Questions in this section aimed to evaluate the understanding and current practices by provincial leadership of principles of user-design in public services. A key characteristic of the digital era is that end-users play an important role in the design of public services. A well designed public service would not only satisfactorily address people's needs but also help governments save costs in fixing potential problems in the future and improve the government's overall efficiency.

Question 1. Have you heard of user-focus design? How are the traditional public services or administrative procedures being transformed to electronic in your province?

Question 2. How are the public services selected to be transformed to electronic in your province? Is there a priority to which services are first transformed? Why?

Question 3. What is the success rate of digitalising administrative procedures? Please give examples of a successful digitalised administrative procedure and an unsuccessful digitalised administrative procedure.

Question 4. Which are the criteria used in evaluating the performance of online administrative procedures, by a given budget, timeframe, design or by end-user satisfaction?

Question 5. Are you aware of principles of human-centred design? If yes, are they used in your department? What are the differences between human-centred design and the traditional approach? Please describe in detail.

Question 6. Were there demands for new public services from the people during the transition to e-government in your province? If yes, how were these new public services designed and deployed?

Question 7. What capabilities (skill sets) should your department have to design public services based on people's needs?

5. Data: uses and opportunities

Questions in this section aimed to evaluate the understanding of and current practices by the provincial leadership in recognising the potential use cases of data in solving local social-economic challenges and in informing the policy making process. Data could be understood as structured (e.g. traditional tabulated data from the census or surveys) or unstructured (e.g. free texts, images, audio and video recordings).

Question 1. How are datasets being collected and managed in your department? Specifically, please describe what these datasets are, how often they are collected and stored and from which sources. These datasets may be generated by your department or by other departments but stored at your department for administrative purposes.

Question 2. How are the above datasets analysed and used in your department?

Question 3. What are the challenges *facing your department* in collecting, managing and analysing these datasets? What are possible solutions to these challenges? What is your plan to address these challenges?

Question 4. *As the head of your department*, what are the challenges you are facing in managing the collection, management and analysis of these datasets? What are possible solutions to these challenges?

Question 5. Will your department be collecting and using other datasets in the future? What problems will these datasets help solve?

Question 6. If yes, how do you plan to access, collect, manage and analyse these datasets?

6. Data: Harmful uses

Questions in this section aimed to evaluate the understanding of and current practices by provincial leadership in recognising risks involved in the process of collecting, storing, managing, and analysing data when developing and deploying digital public and government services and in policy making.

Question 1. Are you aware of any risks associated with the way your department collects, manages and analyses data to the people, especially those in the vulnerable groups, such as the minorities, women in remote areas, the elderly and the under-educated? For example, information from these groups may be underrepresented in the government systems, leading to inadequate and inappropriate support available to them, or their information may be accessed and used by unauthorised parties.

Question 2. If yes, can you please share real-life examples of those risks, especially at your department?

Question 3. What are measures being in place in your department to mitigate these risks?

Question 4. Do you think these measures may affect the intended usability of the public services to the people or of the shared systems between government departments that they protect? For example, over-anonymising people's identity may lead to difficulties in devising and providing the right support to vulnerable groups of people.

Question 5. Will your department be collecting and using other datasets in the future? What problems will these datasets help solve? What are the risks associated with these datasets and what is your plan to mitigate these risks?

Question 6. *As the head of your department*, in order to effectively recognise, mitigate and minimise the impacts of these risks, what capabilities do you think your department would need?

7. Working in the open

Questions in this section aimed to evaluate the understanding of provincial leadership of governments operating in the open (or 'open governments'). 'Open governments' are characterised by transparency, shared resources and active exchanges of information between government departments, between governments and businesses and people. We noted that 'open' is not synonymous to sharing all government information with the public but doing so in accordance with laws and regulations.

Question 1. Why do you think governments, worldwide and in Viet Nam, tend to become more open and transparent in sharing information between government departments and with the public?

Question 2. What are the similarities and differences between the following types of government?

- Open government: high degree of resource sharing between government departments, and high degree of mutual exchange of information between the government and the public.
- Transparent government: partially sharing information and resources between government departments and with the public.
- Closed government: Limited or no sharing of information and resources between government departments and with the public.

Question 3. What are the pros and cons of open government in the above question?

Question 4. How should governments leverage social media platforms and other digital technologies in sharing information and resources to improve the government efficiency?

Question 5. What is the difference between open government (as described above) with the following models that are common in Viet Nam?

- Socialisation (or privatisation), encouraging business and people participating in the delivery of public services.

- 'People know, people discuss, people do, people monitor' and 'grassroots democracy'.

8. Overcoming legal, financial, and organisational barriers

Questions in this section aimed to understand if and how provincial leadership overcame barriers (if any) in transforming the administration in local governments, especially in relation to the use of digital technologies.

Question 1. Experience worldwide and in Viet Nam showed that public administration reforms encounter various barriers, in the digital environment or not. What do you think are the common barriers to these reforms? What are the causes of these barriers? Do you observe these barriers in your province?

Question 2. How does the digital environment affect these barriers?

Question 3. What are the major public administration reforms (e.g. in administrative procedures or policies) in your province in the last few years?

Question 4. Can you give an example of your provincial government overcoming the barriers in doing these reforms or in delivering/introducing a new public service (e.g. Hue-S mobile app, Da Nang Smart City app, Da Nang Urban Management Facebook page)?

Question 5. What are the solutions to overcoming these barriers? How do digital technologies play a role in these solutions?