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# ASSESSMENT OF DIGITAL PUBLIC GOODS

RFP/KAZA/2021/001

GAP ASSESMENT and CAPACITY ASSESSMENT REPORT

25 JUNE 2021

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# 1. ABOUT THE FIELD STUDY

## FIELD STUDY ACTIVITIES RELEVANT TO GAP ASSESSMENT

Based on the detailed planning in inception phase and stakeholder mapping, we conducted focus group meetings and interviews with the following stakeholders:

Name of the Stakeholder (s)	Format of meeting	Date&Time
Astana International Financial Centre (AIFC)	Interview	01/06/2021
JSC Centre for International Programs	Interview	07/06/2021
Department of Development of E-Health of the Republic of Kazakhstan	Interview	07/06/2021
Joint Stock Company “National Agency for the Development of Innovations“ QazInnovations ”	Interview	08/06/2021
Zerde National Infocommunication Holding	Interview	09/06/2021
BTS Education	Interview	10/06/2021
Academy of Public Administration under the President of RK	Interview	11/06/2021
National Information Technologies	Interview	11/06/2021



## FIELD STUDY ACTIVITIES RELEVANT TO GAP ASSESSMENT

Based on the detailed planning in inception phase and stakeholder mapping, we conducted focus group meetings and interviews with the following stakeholders:

Name of the Stakeholder (s)	Format of meeting	Date&Time
The Ministry of Labor and Social Protection of Population of the Republic of Kazakhstan.	Interview	15/06/2021
The Ministry of Digital Development, Innovations and Aerospace Industry of RK	Interview	18/06/2021
The Ministry of Education and Science of RK	Interview	22/06/2021
National Volunteer Network	Focus Group	01/06/2021
Public Foundation "Best for kids"	Focus Group	01/06/2021
AVR Group	Focus Group	01/06/2021
SEZUAL	Focus Group	01/06/2021
AYALA Charity Foundation	Focus Group	02/06/2021
Alpharabius Bureau for Continuing Professional Development	Focus Group	02/06/2021

## FIELD STUDY ACTIVITIES RELEVANT TO GAP ASSESSMENT

Based on the detailed planning in inception phase and stakeholder mapping, we conducted focus group meetings and interviews with the following stakeholders:

Name of the Stakeholder (s)	Format of meeting	Date&Time
BTS Education	Focus Group	03/06/2021
Social innovation Hub	Focus Group	03/06/2021
Republican Federation of Educational and Sports Robotics "Kazrobotics"	Focus Group	07/06/2021
"OZIM" Social Project	Focus Group	09/06/2021
naimi.kz	Focus Group	09/06/2021
UN Volunteers	Focus Group	09/06/2021

## QUESTION SETS / INTERVIEW (1 OF 2)

Below question set was used in the interviews

### Maturity of the ecosystem

- Who are the key stakeholders of each area? What are their roles? How active are the stakeholders?
- Are there available reports or statistics on the expectations and/or feedback of the end users/citizens/public?
- How do the stakeholders collaborate? E.g. periodic conventions? A digital platform? Etc.
- Is there any feedback mechanism available for the effectiveness of these digital goods?
- Are there major disagreements between the stakeholders? If so, on which angles?
- What is your perspective on the adequacy of the available assets?
- How regulated is the area? Are there explicit or implicit regulations?
- Do you think there is room for improvement in terms of use cases and coverage?
- Is there a supervisory and/or regulatory authority regarding the area?
- Has there been any study on the "citizen journey" regarding these digital goods?
- Is there a reporting structure regarding the area? E.g. to government institutions? To International organizations, etc.
- Is there any mechanism to collect feedback form the end users? Or from other stakeholders?



## QUESTION SETS / INTERVIEW (2 OF 2)

Below question set was used in the interviews

### Accessibility

- Are there any costs regarding the access and use of the available digital assets/tools?
- Are there any demographic constraints on the access and use? Such as age, gender, educational attainment, financial situation, household composition.
- Are there any language barriers regarding the access?
- How good is the end user literacy to use the tools?
- How user friendly are they?
- Are instructions clear and intuitive on how to use?
- Do they accommodate the special needs of the disabled segments?

## QUESTION SETS / FOCUS GROUP

Below question set was used for guiding purposes in the focus group study. Also free format discussion was encouraged.

### Focus Groups #1, #2, #3 (held on 01/06, 02/06, and 03/06)

- Who are the key stakeholders of this area? What roles do they play? How active are they? How regulated is the area?
- How do you see the coordination regarding the efforts in addressing these areas?
- What are some digital tools that address the priority areas? What are available use cases and who are the target segments?
- How do you see their accessibility? Are there any costs regarding the access and use of the available digital assets/tools? Any restrictions regarding age, location, language barrier, etc.? Are they user friendly? Do they accommodate the special needs of the disabled segments?
- What is the level of awareness regarding these assets? Are they known by the public/target segments? How are they communicated? How widely used are they?
- How do you see the effectiveness of these digital tools? Do you think there is room for improvement in terms of use cases and coverage?
- Were you consulted during the development of these digital tools?
- Is there any special mechanism / regulation to protect users from miss-use of Digital Goods?

## QUESTION SETS / FOCUS GROUP

Below question set was used for guiding purposes in the focus group study. Also free format discussion was encouraged.

### Focus Groups #5, #6 (held on 07/06, and 09/06)

- What are the problems you address with your digital tools? What are some critical uses cases you provide for?
- What challenges do you see in development of digital assets? For open content? Open source? Open license? Open data? What are some critical issues regarding regulatory framework? Technology infrastructure? Government incentives? Other?
- How do you see the technology infrastructure for development of further digital assets? Broadband, cyber security, regulatory framework on data privacy, etc.
- How do you see the market accessibility of the available digital assets? Are there any critical barriers for market entry?
- What are some challenges in scaling up? What do you need for scaling? What needs to be done by the government?

## 2. GAP ASSESSMENT FINDINGS

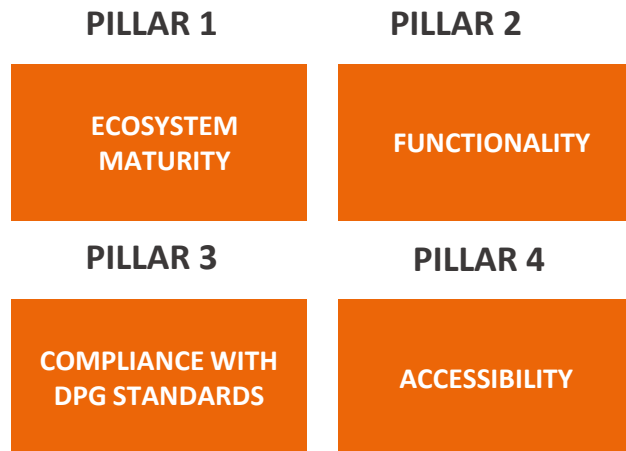
## METHODOLOGY AT A GLANCE

Gap assessment report is prepared with the following inputs:

- Review of existing ecosystem of Kazakhstan based on publicly available sources, in English and/or in local language(s)
- Expert opinion, based on in-depth discussions with the local team members
- Field study (focus group studies and interviews)

We employed

- A robust framework for the gap assessment, focusing on the below dimensions as agreed with UNICEF team:



Priority areas of this study, namely:

- Digital economy and innovation
- Job matching, employability, and skills
- Growth education and early child development
- Accessibility and inclusion of individuals with special needs
- Digital health services for children, adolescents and youth
- Child online safety

By nature these areas have notable intersections and overlaps, thus our analysis takes these overlaps into consideration and refrains from repeating the commonalities. In the following pages, we present a unified and holistic view of these 6 areas under 4 pillars.

# PILLAR 1: ECOSYSTEM MATURITY (1/11)

## 1 Vision and strategy of government on the sector?

	A. Digital economy and innovation	B. Job matching, employability, and skills	C. Growth Education and early child development
• <b>Key messages</b>	<p>“Digital Kazakhstan” (2018-2022) is a program, aiming on the accelerating economy growth and upgrading the living standards, as well as creating conditions for digital economy. The program covers mostly digitalizing the national industries (fuel and energy, mining and metallurgy, agro-industry, e-commerce).</p> <p>The key tasks related to this project:</p> <ul style="list-style-type: none"> <li>-Smart Bridge Project – easing cooperation between the ministries, digitalization of budget planning</li> <li>-Digitalization of the financial sector, tax and customs administration</li> <li>-Ensuring information security</li> <li>-Digital «SILK ROAD»</li> </ul>	<p>“Digital Kazakhstan” (2018-2022) key tasks related to this project:</p> <ul style="list-style-type: none"> <li>- Digitalization of social and labor sphere (electronic labor platform)</li> <li>- Growing the number of graduates with basic information and communication technologies (ICT) competencies, and number of the graduated ICT specialists.</li> <li>-Level of digital literacy of 79,6% population (professional staff in social field, agriculture and health trained in digital skills, population trained in basic digital competencies)</li> </ul>	<p>“Digital Kazakhstan” (2018-2022) key tasks related to this project:</p> <ul style="list-style-type: none"> <li>- Introducing basic programming in primary education.</li> </ul>
• <b>Existence of Government Supervision</b>	• Yes	• Yes	• Yes
• <b>Maturity Level Rating</b>	• 4	• 4 (but covers only a few areas)	• 3 (covers only one area)

Rating scale:

- 1: No vision
- 2: Implied
- 3: Explicitly indicated in national strategy papers but without supporting policies
- 4: Explicitly indicated in national strategy papers and supported by policies, enforcing mechanisms and regulations



# PILLAR 1: ECOSYSTEM MATURITY (2/11)

## 1 Vision and strategy of government on the sector?

	D. Accessibility and inclusion of individuals with special needs	E. Digital health services for children, adolescents and youth	F. Child online safety
• <b>Key messages</b>	<p><i>Law "On social protection of disabled people in the Republic of Kazakhstan" regulates this area:</i></p> <ul style="list-style-type: none"> <li>• Parents of children with disabilities have the right to choose the place of education of the child.</li> <li>• Since 2012 the established quota for the disabled is 1% upon admission to educational organizations</li> <li>• Children with disabilities have priority rights for free public education</li> <li>• "Invataxi" (people with disabilities are delivered free of charge to educational institutions, medical institutions, airports, train stations and other social facilities).</li> </ul> <p><i>National plan to ensure the rights and improve the quality of life of disabled persons until 2025 makes references to this area:</i></p> <ul style="list-style-type: none"> <li>• 24 services through eGov</li> <li>• the official Internet resources of state bodies have versions for visually impaired persons.</li> </ul>	<p>"Digital Kazakhstan" (2018-2022) key tasks related to this project:</p> <ul style="list-style-type: none"> <li>• <i>Digitalization of healthcare</i> (connecting healthcare facilities to the internet, computer equipment of medical institutions, reduction of service time in polyclinics)</li> </ul>	<ul style="list-style-type: none"> <li>• In 2022, it is planned to introduce Child Welfare Index in Kazakhstan, which will cover safety, health, education, material well-being, and socialization of children. This index will track the performance of government agencies to improve the welfare of children</li> </ul>
• <b>Existence of Government Supervision</b>	• Yes	• Yes	• No
• <b>Maturity Level Rating</b>	• 3	• 2	• 1

Rating scale:

- 1: No vision
- 2: Implied
- 3: Explicitly indicated in national strategy papers but without supporting policies
- 4: Explicitly indicated in national strategy papers and supported by policies, enforcing mechanisms and regulations

# PILLAR 1: ECOSYSTEM MATURITY (3/11)

## 2 Key stakeholders relevant to the sector?

	A. Digital economy and innovation	B. Job matching, employability, and skills	C. Growth education and early child development
• Key stakeholders	<ul style="list-style-type: none"> <li>All government bodies</li> <li>QAZ Innovations</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Labor and Social Protection of Population</li> <li>Ministry of Education and Science</li> <li>All relevant government bodies</li> <li>Regional employment centers</li> <li>NGOs (professional unions)</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Education and Science</li> <li>Ministry of Healthcare</li> <li>Ministry of Labor and Social Protection of Population</li> <li>Local executive bodies</li> <li>NGOs</li> </ul>
• How impactful are the stakeholders?	<p>Common to these areas</p> <ul style="list-style-type: none"> <li>Ministry of Digital Development, Innovations and Aerospace Industry</li> <li>Astana Hub</li> <li>National information technologies JSC</li> <li>Private sector</li> <li>Subordinate organizations of government bodies</li> <li>Zerde National Infocommunication Holding</li> </ul>		
	• 3,5	• 2,5	• 2
• Rating for degree of collaboration	• 4	• 3	• 2,5
	<p>Activity Rating Scale:</p> <ul style="list-style-type: none"> <li>1: Low level of activity without much impact</li> <li>2: A few strong ones that create some impact</li> </ul>	<ul style="list-style-type: none"> <li>3: A few strong ones that create strong impact</li> <li>4: Many impactful stakeholders</li> </ul>	<p>Collaboration Rating Scale:</p> <ul style="list-style-type: none"> <li>1: No collaboration</li> <li>2: Low collaboration</li> <li>3: Sufficient collaboration</li> <li>4: Very strong and institutionalized collaboration</li> </ul>

# PILLAR 1: ECOSYSTEM MATURITY (4/11)

## 2 Key stakeholders relevant to the sector?

	D. Accessibility and inclusion of individuals with special needs	E. Digital health services for children, adolescents and youth	F. Child online safety
• <b>Key stakeholders</b>	<ul style="list-style-type: none"> <li>Ministry of Labor and Social Protection of Population</li> <li>Ministry of Healthcare</li> <li>Subordinate organizations of government bodies</li> <li>Zerde National Infocommunication Holding</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Healthcare</li> <li>Ministry of Labor and Social Protection of Population</li> <li>Republican Center of E-health</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Education and Science</li> <li>National Security Committee</li> <li>NGO (Internet Association of Kazakhstan, <a href="http://www.safekaznet.kz">www.safekaznet.kz</a>)</li> </ul>
• <b>How impactful are the stakeholders?</b>	<ul style="list-style-type: none"> <li>1,5</li> </ul>	<ul style="list-style-type: none"> <li>2</li> </ul>	<ul style="list-style-type: none"> <li>0,5</li> </ul>
• <b>Rating for degree of collaboration</b>	<ul style="list-style-type: none"> <li>2</li> </ul>	<ul style="list-style-type: none"> <li>2</li> </ul>	<ul style="list-style-type: none"> <li>0,5</li> </ul>
	<p>Activity Rating Scale:</p> <ul style="list-style-type: none"> <li>1: Low level of activity without much impact</li> <li>2: A few strong ones that create some impact</li> </ul>	<ul style="list-style-type: none"> <li>3: A few strong ones that create strong impact</li> <li>4: Many impactful stakeholders</li> </ul>	<p>Collaboration Rating Scale:</p> <ul style="list-style-type: none"> <li>1: No collaboration</li> <li>2: Low collaboration</li> <li>3: Sufficient collaboration</li> <li>4: Very strong and institutionalized collaboration</li> </ul>

## PILLAR 1: ECOSYSTEM MATURITY (5/11)

### 3 Perspectives

#### Accessibility and inclusion of individuals with special needs

*“At the moment, public buildings are not commissioned without the consent of the Society for the Disabled. Thanks to that, there are a lot of ramps now. Before that, when the Society for the Disabled had no such influence, the presence or absence of ramps was on the conscience of the entrepreneurs who owned the building.”*

*“The socially responsible part of the companies took on internships and worked for some children with special needs. Now, in general, there are many places where you can see socially oriented projects, probably, our society is ripe for this.”*

*“At “Government for Citizens”, we worked with people with hearing disability. We have created a separate system so that this category can receive public services. We conducted training courses for them. And we had operators who could help with sign language. Together with UNICEF, Astana Hub has created a laboratory for social initiatives. They considered projects that could have a positive effect on socially vulnerable categories. The project has been running for the second year. The intermediate results have already been drawn on the topics of poverty, family, injuries, etc.”*

## PILLAR 1: ECOSYSTEM MATURITY (6/11)

### 3 Perspectives

#### Digital economy and innovation

*The Zerde Holding itself unites 3 organizations:*

- *JSC National Information Technologies'*
- *Technopark "Astana Hub",*
- *QAZ Innovation*

*QAZ Innovation issues grants for the commercialization of projects.*

*Accordingly, each has separate cases of how they interact with different segments of the population. Zerde Holding subsidiaries have signed a memorandum with the Yerekshе Tandau Shelek Foundation. This foundation conducts training courses in programming, design.*

*The Zerde Holding was created to produce “favorable conditions to enhance competitiveness and economic efficiency of infocommunication field, to develop infocommunication resources and standards, to promote investment and innovative activity in the infocommunication sphere”. It does so by managing subsidiaries that in alignment with the holding mission and strategy develop several initiatives. For example, Zerde planned to conduct a tour of the territory of Astana Hub for children and teenagers who are interested in IT. Zerde has also been working with ITeachMe for several years. They hold an inclusive camp, teach for a certain period of time, and then the participants prepare their projects, submit and defend. The final stage of the competition is mainly held on the territory of the Astana Hub. Zerde help them with expert opinions and works with IT champions (companies that are successful in Kazakhstan and are ready to develop in the international arena) to train the students at existing enterprises.*

*“There are business angels. Yet they don’t want to invest in an early stage (no proof of concept, market,...). Therefore QAZ Innovations is trying to fill that gap with the fund they manage.”*

## PILLAR 1: ECOSYSTEM MATURITY (7/11)

### 3 Perspectives

#### Growth education and early child development

*Astana Hub and UNICEF held competitions to foster social projects. A competition commission was formed by representatives of the Ministry of Education and the Ministry of Labor. Several competitions were held for encouraging the child for good grades, situational games for parents, online games.*

*There were approximately 37 applications for online tools:*

- *20 for education*
- *8 for violence*
- *5 for injury reduction*
- *4 for medical support for families.*

#### Job matching, employability, and skills

*“We need to develop digital skills of 100,000 people.*



## PILLAR 1: ECOSYSTEM MATURITY (8/11)

### 3 Perspectives

#### Growth education and early child development

*“When introducing digital educational solutions, Ministry of Education, primarily interacts with the Ministry of Digital Development, Innovations and Aerospace Industry. This is the authorized body that is responsible for digitalization and the creation of digital infrastructure that allows the Internet to be carried out, so that there is an infrastructure solution for cloud solutions. For example, there is a data processing center in which educational content will be located. In addition, in the era of global digitalization, the Ministry works with all government bodies and, on social issues with the MLSPP of the Republic of Kazakhstan and the Ministry of Health of the Republic of Kazakhstan.*

*Practical work with all government agencies that have databases is critical. For example, the Ministry of Justice of the Republic of Kazakhstan is a state database of individuals, with which integration allows us to make reconciliation by Individual Identification Numbers. This is a very correct decision, because now we are moving towards “per capita financing”. The money goes for the child and these funds must be provided with appropriate conditions.*

# PILLAR 1: ECOSYSTEM MATURITY (9/11)

## 3 Overall assessment of the pillar

- Vision
- - - Impact of Stakeholders
- Degree of Collaboration
- ..... Completeness of the Ecosystem

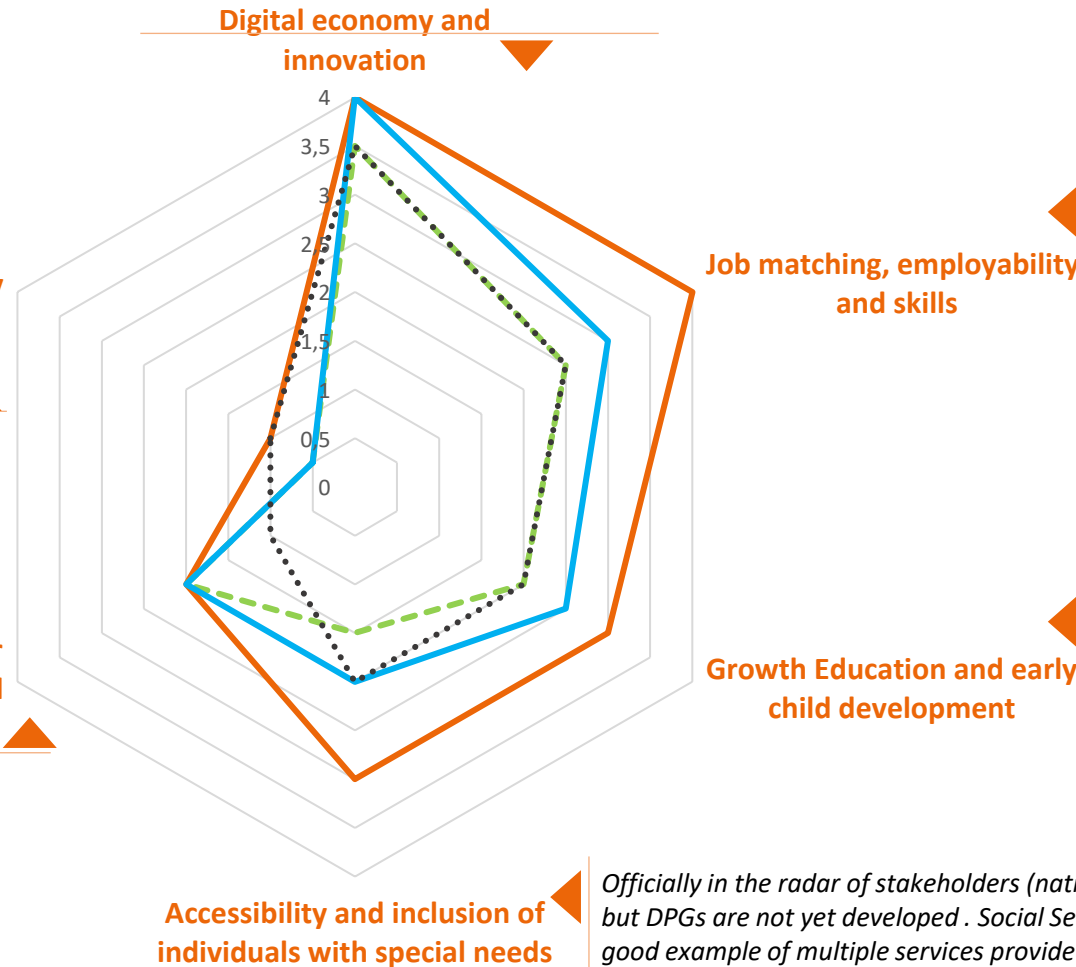
In the radar of most stakeholders, the area is more commercializable and focused on industries. Ecosystem is more matured in terms of funding options, training services, infrastructure, etc.). No DPGs.

**Child online safety**

This is the least developed area among the ones studied. Not in the radar of public stakeholders and NGOs. The first steps are being taken by Ministry of Education and Science (regulations, responsibility sharing)

**Digital health services for children, adolescents and youth**

This is not in the radar of stakeholders, unregulated areas with no formal policies, ecosystem is not emerging because weak internet connection and digital literacy in the suburb regions. Digital healthcare is planned to be developed, but it does not differentiate between adults and children.



A few private digital solutions (headhunter.kz, naimi.kz, rabota.kz), not in the radar of most of the stakeholders, less attractive for investors and government, regulated within the Labor Code, different professional associations, urban-centered services because of weak internet connection and digital literacy in the suburb regions. Also there is platform enbek.kz. It is a government solution developed with World Bank.

There are a few NGOs addressing the area, subsidies are given to private kindergartens, a lot of private initiatives because of potential to be commercialized, DPS are supported within the common policies for innovation support, urban-centered services because of weak internet connection and digital literacy in the suburb regions

Officially in the radar of stakeholders (national plan is available), lot of NGOs, but DPGs are not yet developed. Social Services Portal is a part of eGov and a good example of multiple services provided to country wide population.

# PILLAR 1: ECOSYSTEM MATURITY (10/11)

## 3 Overall assessment of the pillar

### A. Digital economy and innovation

- Strong vision backed by an explicit programme: “Digital Kazakhstan” Programme streamlines the activities of all stakeholders around the vision.
- Interaction between governmental organizations and business are well regulated.
- Level of overall maturity is high.

### B. Job matching, employability, and skills

- Strong vision, owned by both the government and International organizations: Ministry of Labor and Social Protection works in collaboration with World Bank, Interested government organizations, Private organizations (such as BTS) and employment centers.
- Above mentioned stakeholders are working actively in the sphere of creating platforms and mobile applications. The effort and level of collaboration between the stakeholders are visible.

### C. Growth education and early child development

- The Ministry of Education develops educational policy centrally, at the national level, and then all functions for the selection of educational platforms and solutions are transferred to the jurisdiction of local executive bodies. Local executive bodies conclude contracts with private companies. In a number of regions there are already digital educational platforms available to the public.
- Integration of private educational platforms to the state is possible, but private solutions must pass all the requirements of the information security rules. In view of the sudden transition to online education, significant steps have been taken to develop cooperation with private companies. Now there is a need to rethink situation further development after the end of the public-private partnership.
- In case a project/digital educational solution is to be developed/procured/provided to all the schools, then government bodies under the law cannot easily cooperate with NGOs or private organizations, as any initiative within the framework of public-private partnerships takes a long time.

## PILLAR 1: ECOSYSTEM MATURITY (11/11)

### 3 Overall assessment of the pillar

#### D. Accessibility and inclusion of individuals with special needs

- A very weak interaction of government bodies with NGOs and private organizations is observed.
- Government bodies are more interested in collaboration with international organizations, for funding and capacity building purposes (e.g. transfer of experience, leveraging international methodology, leveraging expertise, etc.)
- Government bodies under the law cannot easily cooperate with NGOs or private organizations as any initiative within the framework of public-private partnerships takes a long time.

#### E. Digital health services for children, adolescents and youth

- Out of the radar of government bodies and large NGOs. A very weak interaction of government bodies with NGOs and private organizations
- Government bodies are more interested in collaboration with international organizations
- Government bodies under the law cannot easily cooperate with NGOs or private organizations, as setting up work in the framework of public-private partnerships takes a long time

#### F. Child online safety

- In general, there is a certain degree of control and monitoring over the online content as per political and social considerations, in addition to child online safety. There are whitelists and blacklists at the level of large-scale service providers for 18+content.
- Other than the general monitoring and control, this area is not in the radar of public stakeholders and NGOs and it is a less developed area among others. Not regulated, not explicitly addressed and not owned by stakeholders until now.
- The Committee for the Protection of Children's Rights, Ministry of Education and Science started developing normative legal acts, documents and trying to somehow regulate areas of responsibility

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (1/14)

### 1 Examples of available digital tools

No	Name of the Digital Tool	Core Functionality	Mapping of Priority Area	Functionality Rating	Accessibility Constraints
1	egov //egov.kz/	Digital government services, such as school registry and follow up, social security, customs, transport, employment. This is a typical e-government solution platform.	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> <li>Job matching, employability, and skills</li> <li>Growth Education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> <li>Digital health services</li> </ul>	3	Free, Electronic digital signature is needed for using the services, Has a mobile version
2	Damumed //damumed.kz	Booking an appointment with Doctor, Find a clinic and a medical service	<ul style="list-style-type: none"> <li>Digital health services</li> </ul>	3	Free and available in Playmarkets
3	Kaspi //kaspi.kz/	Multiplatform payment / credit solution which is applicable for all online payments	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> </ul>	4	Free and available in Playmarkets
4	Opi //opi.dfo.kz/p/	Checking the financial and audit reports of public companies of the Republic of Kazakhstan	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> </ul>	4	Free

#### Functionality Rating Scale:

- 1: Basic/minimal functionality with room to develop
- 2: Meeting expectations
- 3: At par with global examples
- 4: Best practice candidate

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (2/14)

### 1 Examples of available digital tools

No	Name of the Digital Tool	Core Functionality	Mapping of Priority Area	Functionality Rating	Accessibility Constraints
5	Enpf //enpf.kz/	Provides detailed information on the status of the client's retirement account Allow visualization of the "unified accumulative pension fund" / pension contributions	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> </ul>	3	Free, subscription required
6	Stepik //welcome.stepik.org/	Cloud based digital learning environment specially for computer science	<ul style="list-style-type: none"> <li>Job matching, employability, and skills</li> </ul>	3	Free for basic functionality Paid for full functionality
7	Idoctor //idoctor.kz/	Finding a doctor in 21 regions of KZ	<ul style="list-style-type: none"> <li>Digital health services</li> </ul>	3	Free
8	Rabotanur //rabotanur.kz/	Finding a Job	<ul style="list-style-type: none"> <li>Job matching, employability, and skills</li> </ul>	3	Available in Russian and Kazakh language, Free
9	hh Head Hunter //hh.kz/	Finding a Job	<ul style="list-style-type: none"> <li>Job matching, employability, and skills</li> </ul>	3	Available in English, Russian and Kazakh language, Free

#### Functionality Rating Scale:

- 1: Basic/minimal functionality with room to develop
- 2: Meeting expectations
- 3: At par with global examples
- 4: Best practice candidate



## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (3/14)

### 1 Examples of available digital tools

No	Name of the Digital Tool	Core Functionality	Mapping of Priority Area	Functionality Rating	Accessibility Constraints
10	Bilimal //bilimal.kz/	Online learning platform that provides courses across a variety of domains	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> <li>Growth Education and early child development</li> </ul>	3	Paid
11	EduMark //web.edumark.kz/	Education progress tracker and electronic diary for education	<ul style="list-style-type: none"> <li>Growth Education and early child development</li> </ul>	3	Free for basic functionality Paid for full functionality
12	Bilimland //bilimland.kz/	Online learning platform that provides courses across a variety of domains for school children	<ul style="list-style-type: none"> <li>Growth Education and early child development</li> </ul>	3	Paid Available in English, Russian and Kazakh language
13	Enbek //enbek.kz/	Career guidance for adults, children and youth, including adults with disabilities	<ul style="list-style-type: none"> <li>Digital economy and innovation</li> <li>Growth education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> </ul>	4	Free Accessible for everyone

#### Functionality Rating Scale:

- 1: Basic/minimal functionality with room to develop
- 2: Meeting expectations
- 3: At par with global examples
- 4: Best practice candidate

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (4/14)

### 1 Examples of available digital tools

No	Name of the Digital Tool	Core Functionality	Mapping of Priority Area	Functionality Rating	Accessibility Constraints
14	OZIM Social Project	Helping mothers with children with special needs	<ul style="list-style-type: none"> <li>Growth education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> </ul>	1 <i>this is in startup process</i>	Free Accessible for everyone
15	AVR Group (labs and glasses) <a href="http://avr-group.kz/">//avr-group.kz/</a>	Helping children with special needs	<ul style="list-style-type: none"> <li>Growth education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> </ul>	4	Not free, needs financing
16	SEZUAL <a href="http://sezual.com/">//sezual.com/</a>	Helping children with special needs	<ul style="list-style-type: none"> <li>Growth education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> </ul>	4	Not free, needs financing
17	Jumysbar <a href="http://Jumysbar.kz/">//Jumysbar.kz/</a>	Online learning platform	<ul style="list-style-type: none"> <li>Growth education and early child development</li> <li>Accessibility and inclusion of individuals with special needs</li> </ul>	4	Paid

#### Functionality Rating Scale:

- 1: Basic/minimal functionality with room to develop
- 2: Meeting expectations
- 3: At par with global examples
- 4: Best practice candidate

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (5/14)

### 2 Perspectives

#### Challenges around accessibility and readiness...

*“The problem may be uneven access. It turns out that social status strongly affects access to quality education and medicine. The product itself may exist and be excellent, but not everyone can know about it. Here the question is already marketing, how it was conducted and whether money was allocated for it. There are no technical problems.”*

*“One of the biggest problems is the quality of the internet. The second is the lack of digital infrastructure. Third, it is the IT competence of teachers.”*

*“Firstly, I believe that Kazakhstani IT is developing well and we are ahead of neighboring countries, including countries that are economically stronger than us. I would rate it at 7 out of 10. But how much people use IT solutions? IT solutions should be in demand. If the tool is not used, then it can be considered as “not working”. The readiness of the population itself to implement digital projects in our country is growing every year, but half of the population is helpless in this sense. But products like Kaspi.kz give a boost. For example, my mother is 63 years old, and she successfully uses this application and pays for utilities through Kaspi. Therefore, we are moving in both directions. But for now, state digital projects are going ahead and it should be so.”*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (6/14)

### 2 Perspectives

#### Challenges around centralization...

*“Centralization is one of our problems. The issues with centralization are three-fold:*

- First, each region has implemented its own solution. For example, we have Bilimal in the Karaganda region and we have Kundelik in Nur-Sultan. If a child moves from Karaganda to Nur-Sultan, it is difficult to keep track of the grades as all grades are kept locally. Therefore, there is a need for a single platform that avoids duplicate data and integrates the data seamlessly.*
- Second problem is the distributed solution to financial costs. Earlier E-Learning was financed only by the republican budget, while now platforms are financed from the local budget and 2, 3, or even 10 times more funds are spent. Each region pays for the development of platforms itself, which causes the costs to rise. Centralization of the platforms could bring significant investment optimization.*
- Third problem is that it is hard for teachers and students to shift between platforms when they move from one region to another. Teachers get used to Kundelik and when they move to another area, they must study the functionality of the new platform, adapt accordingly and go through certain stages of training. In any case, there is a psychological barrier for children who are used to working in one environment and moving to another environment is a kind of barrier for them.”*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (7/14)

### 2 Perspectives

#### Information infrastructure for job matching, employability, and skills is in place...

*“In total, we have 16 information systems in different domains:*

- labor and employment,*
- labor protection,*
- social services,*
- social security,*
- social insurance,*
- migration.*

*All this is contained in our information systems. These information systems have been introduced since 1998, have been modified, modernized, developed, improved on an ongoing basis. This process is endless.*

*The most prominent examples are the **Social Services Portal** to provide people with disabilities with services and rehabilitation (cane, wheelchair, diapers, hygiene products, etc.).”*

#### More effort needed in Child Online Safety

*“We need to work with Kazakhtelecom and mobile operators to monitor (child online safety) or at least introduce restrictions. For example, when issuing numbers, the numbers are by regulation registered under the name of the parent, rather than the young/child. However, if we can change the regulation to register the number under the name of the child, we can impose safety measures easily.”*

*“We even have problems in Kundelik (learning tracking app and digital diary): it is not funded by the state but relies on advertising, and since most of the time the computer or the device is used both by the parent and the child, due to the cache advertisements that are irrelevant to children can be viewed by the children”*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (8/14)

### 2 Perspectives

#### New Horizons...

##### *E-Appeal*

*“Now the state is creating an information system: **E-appeal**. It will be launched on July 1<sup>st</sup>. E-Appeal portal aims an official service for accepting citizens’ appeals. It will operate in accordance with the rules of the Prosecutor General's Office for receiving and processing appeals. Any citizen and organization can submit an appeal to any state body, and within 15 days he receives his answer. 70% of requests are expected go through this portal. There are also pages of open dialogue, where citizens can also leave appeals.”*

##### *New e-Health apps on the way*

*“Department for Development of E-Health of RK has partnered with UNICEF to promote a mobile application called Visiting Nurse and we are now working on Early Childhood Care.*

- Visiting Nurse app is designed for nurses who provide home patronage for newborns.*
- Early Childhood Care App is intended for young mothers, and it is more informative in nature, with additional materials for mothers who do not know how to take care of children.*

*There are also private initiatives, the SOS Medical Center Company has developed a mobile application for pregnant women "Medical System SOS", for remote patronage of pregnant women and women with children under one year old. It contains detailed information on how the pregnancy should proceed, what to look for, what can be done, what cannot be done, and if some indicators deviate from the norm, the doctor signals this, there is an emergency call button.”*



## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (9/14)

### 2 Perspectives

#### Investment and budgetary challenges in growth education and early child development

*“The Nation-wide E-learning project started in 2012. It was assumed that by 2020 all schools will be covered 100%. But in 2013 it was stopped and in 2015 the funding was stopped.”*

*“NED is the National educational database, the purpose of which was originally to keep records and statistics of children, development trends, forecasts, etc. There are plans to expand it to include new functionalities like daily attendance, grades, homework, academic performance, or include the inputs from relevant apps like Bilimal etc., but this is not possible due to the data storage limitations.”*

*This system should manage the educational process, with all the ensuing consequences: standard curricula, course plans, staffing, calculation of the teaching load, grading, assignment of homework, the formation of an individual trajectory and approach, the work of psychologists, social support students, etc.*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (10/14)

### 2 Perspectives

#### Case in Point for PPP solutions: Kundelik

*“Kundelik is an online tool for tracking the parameters of the school system (performance, attendance, etc), intended for use by parents and schools. It is operational since 2017. Kundelik is a private solution based on public private partnership (PPP), where the state is only responsible for connecting schools to the system, ensuring the use of this platform, and all financial costs and burden are borne by the private company. The advantage is that the state does not bear the burden, but the disadvantage is that any digital solutions that are implemented by private companies are temporary. A PPP agreement is valid for 12 years. For example, if it was commissioned in 2018, then in 2030 it will stop functioning. Before 2030, we must decide how it will continue. The ownership of the Kundelik platform belongs to a private company and it is private property, where the state has no rights to this system. Therefore, already now we must think over the question of how we will save our data.”*

*The second issue is confidentiality and protection of personal data. Since we are also experiencing this public-private partnership and there is a certain limitation in the use and transfer of personal data. And this is very important, since all private solutions that are now working in the educational field of Kazakhstan must have and require compliance with these rules. All platforms must comply with information security requirements. They must protect personal data, ensure their strict protection, respectively, they must be stored on servers located in Kazakhstan, they must be protected and ensured from password cracking, etc. These are 2 problems that need to be addressed when implementing digital solutions.*

*In the existing educational platforms, the issue of universal education is not considered. If a visit on these digital platforms were mandatory and statistics were kept, then it would be possible to track the issue of universal education. We should have seen who does not attend lessons. It is difficult to monitor those children who were supposed to come to school. Also, digital solutions would help keep records of children who were supposed to come to grade 1. Do they come on time or are there children who do not attend?”*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (11/14)

### 2 Perspectives

#### “Digital officers” for improvement of the government digital services

*“Within the framework of cooperation with Ministry of Digital Development, Innovation and Aerospace Industry, there is an interdepartmental commission for the provision of public services. When we consider the optimization of these business processes, transfers to electronic format, we also have “digital officers”. These are people with an active civic position, and they identify all these problems on the ground. They live in the regions and reach out to Ministers, Vice-Ministers and talk about existing problems. For example, there is such a state service "attachment to a medical organization", we had a requirement to transfer it into electronic format. Digital officers helped us to identify 9 categories of citizens who can attach directly to the clinic and through the portal they cannot attach by technical reasons. This feedback helped us fix bugs and improve community outreach. Anyone can become a digital officer.”*

#### Integrated solutions pay off

*“Electronic Labor Contracts is a digital solution to digitize the entire history of a person’s career and provide her/him with easier conditions for employment. This is relevant and necessary for both the employer and the applicant. The employer sees the person’s personal file, of course with the consent of the applicant. All information, for example, drug-psycho accounting, medical examination, everything is in the applicant's personal file. The applicant comes with an identity card, and the employer can see everything from the database, based on an individual identification number. For our proactive services, this database will also be relevant, for example, when calculating and issuing pensions.”*

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (12/14)

### 3 Functionality Gaps

#### Priority Area

#### Critical functional areas that are not addressed by existing digital assets\*

Digital economy and innovation

Given the nature of digital economy and innovation, the coverage of tools/assets is, by definition, endless. Therefore, any day, new functionalities should be added to the pool of assets in this area. So rather than assessing the functionality gaps in digital economy and innovation, we focus on the “enablers” of the area.

- **Collaboration platforms:** To the best of our observations, online collaboration platforms for innovation are yet insufficient. Out of the 10 priorities outlined by QAZ Innovations, three are developing significant work, namely Industry 4.0, Spacetech and Fintech.
- **E-company establishment:** The existing e-government services looks like there is still room to drive entrepreneurship: Ease of company establishment through e-government services would potentially give a boost to start-ups. Astana Hub is a good example of business incubator.
- **Open data:** It looks like there is need for establishing the regulatory infrastructure for use of open data by start-ups, so that start-ups can thrive through developing services based on the public data. Several countries have solid regulations and platforms on publication of open data and already benefit from the use of it by businesses.
- **Internet access:** It looks like there a certain degree of gap in accessing the internet between the urban and rural areas. Since Kazakhstan is a large country geographically, more investment is required to ensure that the whole of the country is provided with quality internet access. There is a plan to place Kazakhstan into the roadmap of Starlink Satellite system that will reduce this gap. Digital literacy represent another opportunity that is being addressed by several stakeholders. As an example, computer science is now integrated in the 1<sup>st</sup> grade school programs. This looks like the prerequisite of the full development of digital economy.

Job matching, employability, and skills

This area is in general well-addressed. A missing functionality in the overall job matching tools might be the “certification” function where some certificates are awarded based on the competencies of the job seekers (e.g. Python certificate awarded by the platform based on level of competency)

- \*Based on literature, global practices and perceived public needs in Kazakhstan

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (13/14)

### 3 Functionality Gaps

#### Priority Area

#### Critical functional areas that are not addressed by existing digital assets\*

Growth education and early child development

This area is in general well-addressed. Still some missing areas include:

- A country-wide e-learning platform is missing, as the solutions are partial and not interconnected
- Children with special abilities are not addressed, such as e-learning opportunities for children with high IQ or special talent at arts do not exist.
- Children with disabilities are not addressed, such as e-learning opportunities for children with hearing or visual disabilities are not provided for by the available e-learning tools/platforms.
- Children in autistic spectrum are not taken into consideration. For example, there are no learning or developmental tools for autistic children, and there are no tools for the parents of such children.
- Content in available e-learning is mostly focused on the technical courses, soft areas such as arts, philosophy etc. are not covered much.
- Gamification in learning looks missing.
- Apps that connect parents with babies/toddlers to facilitate exchange of developmental information are missing. Same holds true for “playdating” for kids.
- Apps that facilitate socializing for sports and exercise are missing.

Accessibility and inclusion of individuals with special needs

- Available websites/digital services do not offer alternative digital access of people with visual and hearing impairments. This is, as indicated above, especially valid for the e-learning platforms.
- There are no digital tools for helping people with visual or hearing disabilities, such as provision of guidance.
- There are no digital tools for guidance purposes for parents of children with disabilities.

- \*Based on literature, global practices and perceived public needs in Kazakhstan

## PILLAR 2: FUNCTIONALITY & PILLAR 3: ACCESSIBILITY (14/14)

### 3 Functionality Gaps

Priority Area	Critical functional areas that are not addressed by existing digital assets*
Digital health services for children, adolescents and youth	<p>Digital tools help just facilitate access to health services. On the other hand, digital tools to manage health are missing. Some examples are:</p> <ul style="list-style-type: none"><li>• There are no tools/apps for children with Type 1 Diabetes, where lifestyle management is key in living with diabetes. Around the world, there is a variety of apps addressing children with diabetes, helping them manage their diet and blood sugar.</li><li>• There are no tools/apps for children with chronic diseases, including cancer. In best practices, there are online tools that help children by socializing them with children of similar conditions, help them develop emotional and mental resilience, help them in managing their lifestyle, etc.</li><li>• There are no tools/apps for healthy lifestyle maintenance, including exercise and eating habits</li></ul>
Child online safety	<p>The area is totally void, there is a strong need for some digital tools and awareness regarding child online safety. Filters and access management tools are missing.</p>

- \*Based on literature, global practices and perceived public needs in Kazakhstan

## PILLAR 3: COMPLIANCE WITH DPG STANDARD

### NAME OF THE DIGITAL ASSET

1. Relevance to Sustainable Development Goals \*

2. Use of Approved Open Licenses

3. Clear Ownership

4. Platform Independence

5. Documentation

6. Mechanism for Extracting Data

7. Adherence to Privacy and Applicable Laws

8. Adherence to Standards & Best Practices

9. Do No Harm

*9.a) Data Privacy & Security*

*9.b) Inappropriate & Illegal Content*

*9.c) Protection from Harassment*

*This part will be filled in for each selected DPG candidate in the next report*

### 3. CAPACITY ASSESSMENT FINDINGS



## METHODOLOGY AT A GLANCE

Capacity assessment report is prepared with the following inputs:

- Review of publicly available sources in Kazakhstan regarding the capacity pillars
- Expert opinion, based on in-depth discussions with the local team members
- Field study (interviews)

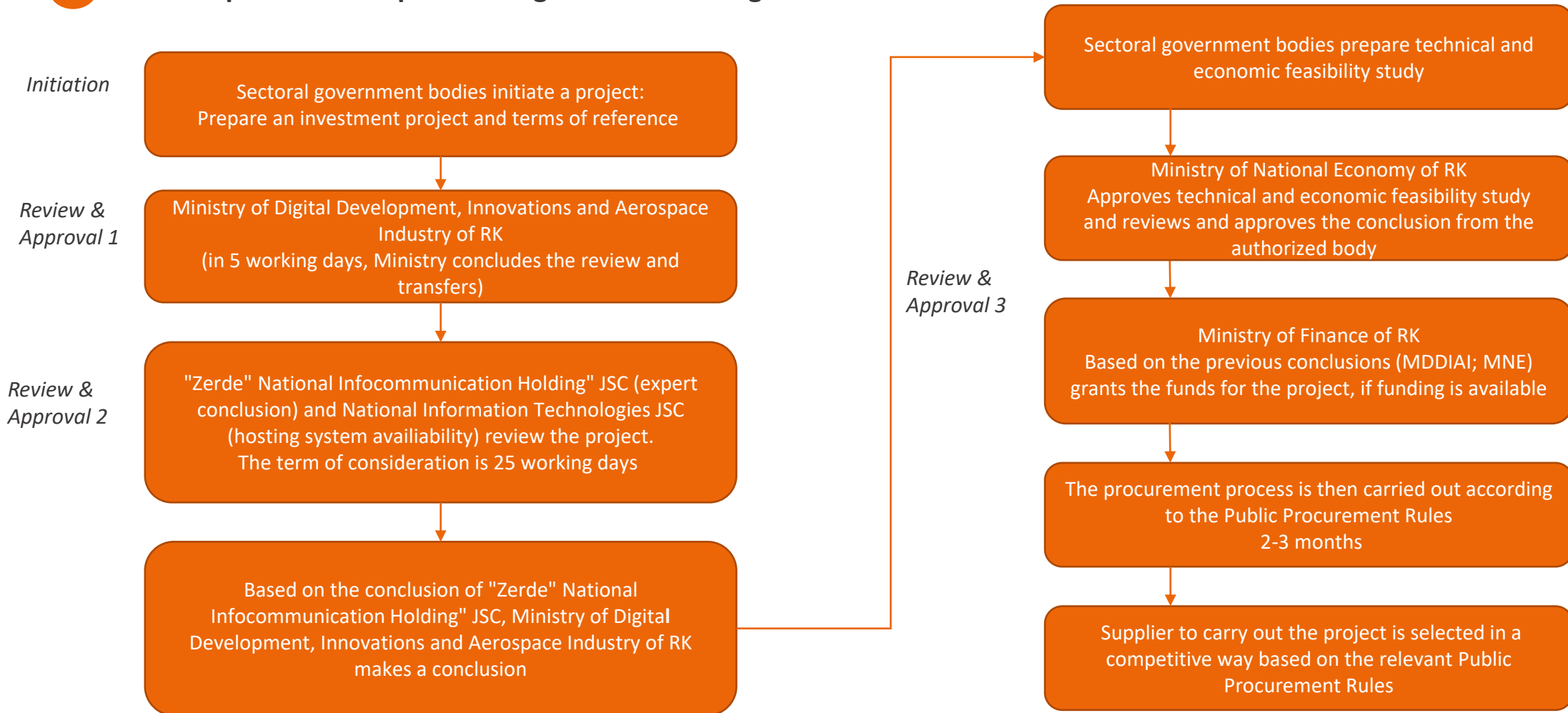
We employed

- a robust framework for the gap assessment, focusing on the below dimensions as agreed with UNICEF team:



# PILLAR 1: REGULATION AND PROCESS (1/11)

## 1 Software procurement process of government at a glance



## PILLAR 1: REGULATION AND PROCESS (2/11)

1

### **Key Player in the process: Digital Transformation Department of the Ministry of Digital Development, Innovations and Aerospace Industry of the Republic of Kazakhstan**

The role of the Department of Digital Transformation is to give an industry opinion from the authorized state body in the field of digitalization on the creation or development of information systems of state bodies.

When a government body wants to create an information system or a digital tool, they turn to **Ministry of Digital Development, Innovations and Aerospace Industry** for opinion on how to proceed with this online/digital asset.

Now **Ministry of Digital Development, Innovations and Aerospace Industry** has a single platform for online resources of government agencies - EPIRGO, and all the sites of state bodies, local executive bodies, are accumulated on this site.

When any government agency wants to create a website, the Ministry allocates a section and provides template site so that the government body do not need to spend separate budget funds.



## PILLAR 1: REGULATION AND PROCESS (3/11)

### 2 Perspectives

#### Procurement is a long process...

*“Financing of digital projects is a problem: Not in terms of allocating funds, but in the time taken to decide on financing the project. Lengthy procedures for agreeing on the allocation of these budget funds for implementation.”*

#### Have the budget 3 years prior to...

*“All funding is carried out within the framework of budgetary legislation. Accordingly, government agencies plan their budget for 3 years in advance, and to create any system is a long process. We cannot develop something in 1-3 months.”*

#### What if we need an unplanned solution?

*“There are some options available to invest in some urgent projects: Working with subordinate organizations\* and tasking them for developing a no-cost solution where possible, is one way. Another option is, in the presence of savings based on the results of public procurement, we can direct the saved funds to priority areas and justify that there is a task, and we need to implement it this year. The third option is yes, in the absence of certain funds, to postpone the implementation for the next year or ask for money for clarifications. In different cases, different approaches.”*

\*In Kazakhstan, each state body has either JSC or Republican state enterprise

#### To speed things up, transition to service model...

*“There are several schemes, but ideally it will take 2 years to develop an information system. To reduce all this in 2015, the regulatory document provided for a model - a service model. Accordingly, you do not buy a finished product, you rent it.*

*In service model, typically the government agency requests a digital solution in service model and asks **Digital Transformation Department of the Ministry of Digital Development, Innovations and Aerospace Industry** for opinion.*

*Digital Transformation Department of the Ministry of Digital Development, Innovations and Aerospace Industry redirect the request to a service integrator where the service integrator checks the architecture of relevant systems business process integration needs, integration with other information system, etc.*

*Discussions are held between the service integrator and the government body and JSC National Information Technologies (the national operator where all information systems rent hosting) and a requirements document is prepared. Following the approval of this document, a competition is announced according to the rules of public procurement. The competition process is expected to take 2 - 3 months.”*

# PILLAR 1: REGULATION AND PROCESS (4/11)

## 2 Perspectives

### 3 typical cases with suppliers...

**Supplier offers a ready-made solution...**

A company approaches the Ministry with a ready-made solution, saying that they are ready to transfer it to the Ministry free of charge so that it works for the benefit of the citizens of Kazakhstan.

↓

The Ministry checks whether the digital asset is useful.

↓

If positive, the Ministry then carries out work of a legal nature in coordination with the Ministry of Digital Development, Innovation and Aerospace Industry.

↓

If there are no legal constraints, then it is transferred to the implementing department.

**Supplier asks for cooperation and access to IT infrastructure...**

A company approaches the Ministry for cooperation for further development of their existing solutions. This could be access to data or granting an approval to use the Ministry's name.

↓

The Ministry assesses the case and informs Ministry of Digital Development, Innovation and Aerospace Industry that it is cooperating with this company in giving them access to systems or approvals, such as "this app is approved by Ministry of Health or Ministry of Education".

↓

Based on the nature of the solution Ministry monitors/gets involved in the content to make sure it is correct.

**Supplier asks for finance to develop a solution...**

A company approaches the Ministry for developing a digital asset (portal, etc) and asks for financing.

↓

The Ministry forwards the case to Ministry of Digital Development, Innovation and Aerospace Industry, to be considered as "service model of informatization where a product is bought as a service, brought to life through JSC Zerde.

## PILLAR 1: REGULATION AND PROCESS (5/11)

### 2 Perspectives

#### **Astana Hub paves the way for start-ups to cater to the government...**

*“In 2017, the Astana Hub IT incubator was founded. Every startup can get help there, starting from the office or assistance in the frame of various government programs that support businessmen. If they contact us, we help them to interact with the Ministry of Digital Development, Innovations and Aerospace Industry of RK, or if it is a useful product that we need, we can go to Public Private Partnership or Zerde Holding has a “service model of informatization”. We cannot give directly and say that a certain person will do it. We can just support and voice the need for Zerde Holding, draw up a task, and they announce a competition. Everything takes place on a competitive basis. Perhaps there are better and cheaper ones on the market. These are the mechanisms that are available to the state body.”*

#### **Holistic assessment of the solutions is critical: is the infrastructure ready?**

*“Government agencies sometimes have to place orders to commercial companies for digital products without assessing the availability of the necessary conditions for the effective functioning of these products. So, for example, we developed these digital solutions, but did not calculate the bandwidth of the networks and did not evaluate other technical characteristics. As a result, the required content does not reach the end user. And executors - commercial organizations formally report to customers, but then they are not responsible for quality since those problems are outside their zone of influence and formal responsibility.”*

## PILLAR 1: REGULATION AND PROCESS (6/11)

### 2 Perspectives

#### Supplier quality: Development is easy, it is the integration ability that matters...

*“If the supplier company's IT maturity in integration is weak, then we have a problem. They write to us and say we are ready to integrate, but there are certain requirements for integration, such as information security requirements or integration via Smart Bridge with any state system or state database... the digital solution must meet the requirements of information security. Compliance with the laws of digitalization and informatization in Kazakhstan is critical. Not all companies are ready for this. If they want to integrate with the state, then solutions must be worked out, protected, must be installed at Kazakhstani data centers. They must undergo a certain study, certification of information security compliance, etc. Yet, there are not many such qualified companies.”*

#### Private sector might need some encouragement...

*“Business have some degree of hesitation in working with the state. Government agencies definitely want to cooperate but it is just quite difficult for a government agency to cooperate with private sector, given the internal processes. We need to be more open and provide ease of cooperation.”*

#### Sometimes it is the top that triggers the new solutions...

*“There are instances when a solution is ordered from the top (Prime Ministry, etc). In that case, a working group with relevant stakeholders is formed to develop a methodology. We look for relevant solutions available in the market, and if we find some, we negotiate”*

## PILLAR 1: REGULATION AND PROCESS (7/11)

### 2 Perspectives

#### Centralization versus decentralization in procurement...

*“I think it is wrong that each department implement the digital initiatives on its own. As a result, the quality of these solutions suffers. I believe that it is wiser to transfer these functions to the subordinate companies of Ministry of Digital Development, Innovations and Aerospace Industry of RK with certain terms of reference.”*

*“The Ministry of Education and Science determines the policy, and accordingly private organizations come to the Ministry with solutions ready for implementation. But decisions must be made by the Local Executive Bodies, in particular, the school must choose. If the state allocates approximately 500 thousand tenge for each child, then the school itself should look for its quality, and competitiveness. Decisions must be made at the school level, directly by teachers and students. When companies contact us with good solutions, for example, on inclusive education, we send their presentations to Local executive bodies. They are the end users of the content directly in their educational learning process, so they can make the right decision.”*

*“A good example is Zoom licenses. Since it is possible to optimize the costs of the budget and of each school, just imagine each school will pay 150 thousand tenge. It would seem small, but if you multiply by 7500, then this is a huge amount. In such cases, of course, it is better to take centralized solutions for subscriptions, for using a license, etc. Also the example of an Elsevier subscription (Scopus, Springer, Web of Science), such subscriptions need to be organized at the state level, because there will be huge discounts. The state pays formally, and schools are provided with it for free. In such cases, there is a real need.”*



## PILLAR 1: REGULATION AND PROCESS (8/11)

### Key issues in software procurement process of government

- In practice, project initiation occurs reactively upon occurrence of undesirable cases or events, rather than based on proactive planning. On the other hand, as per the budget regulation, it is expected that government agencies plan their digital investments in advance, 3 year prior to execution. The rapid changes in needs might require more flexible mechanisms than the existing budget planning terms.
- Preparation of project documentation, including the terms of reference, takes a lot of time and requires special competence in the government body.
- The duration of the approval period can take as high as 1-2 years, which sometimes causes the novelty of the project to disappear. A more agile process could be developed to address the prompt requirements.
- Infrastructure and user readiness review is typically not carried out for the projects, which may potentially cause some lags and/or modifications in implementation. Further, it paves the way to potential user experience problems.
- Especially for cases where the selection of supplier is not based on quality, low execution capacity of the supplier and low supervision capacity of the government may pave the way to poor project implementation.
- Audits for the project's compliance with the terms of reference are not compulsory and not typically conducted.

## PILLAR 1: REGULATION AND PROCESS (9/11)

### Assessment of Pillar 1: Regulation and Process

Dimension	Comments	Overall Rating 1-5*
<b>Overall effectiveness of the software procurement process</b>	Preparation and approval of a document (investment project, terms of reference, technical and economic feasibility study), obtaining a conclusion takes a long period  The process of public procurement itself is well-established and carried out according to the Rules (no problem)	3
<b>Effectiveness of quality assessment for procurement</b>	Quality is assessed and has a weight of less than 30% when calculating a final score sufficient to award a contract – 28.6%  Quality is assessed and weighed more than 70% when calculating the final score sufficient to award a contract - 28.6%  Quality is not considered when calculating the final score sufficient to award a contract - 42.8%	2
<b>Assessment of process enablers</b>	According to the questionnaire response the process is satisfactory – 86%, Very effective – 14%	4

\*1: non-existent, 5 best practice

## PILLAR 1: REGULATION AND PROCESS (10/11)

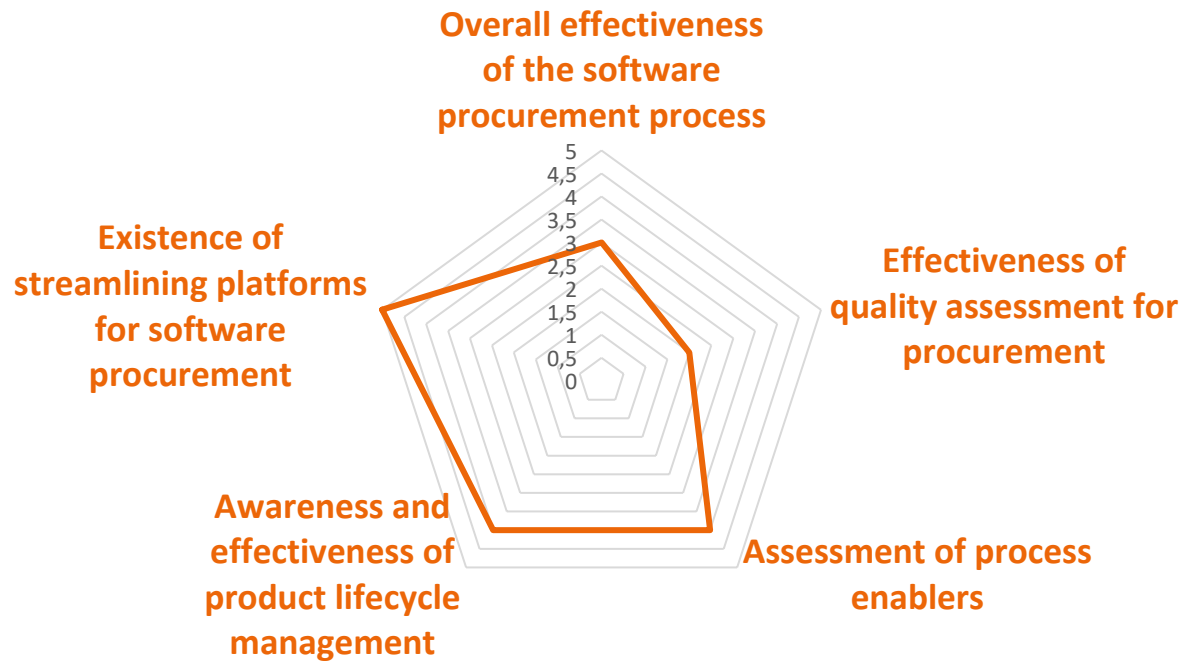
### Assessment of Pillar 1: Regulation and Process

Dimension	Comments	Overall Rating 1-5*
<b>Awareness and effectiveness of product lifecycle management</b>	Product life cycle is taken into account, but very limited – 43%  Product life cycle is fully taken into account – 43%  Product life cycle is not taken into account - 14%	3
<b>Existence of streamlining platforms for software procurement</b>	<a href="https://goszakup.gov.kz/">https://goszakup.gov.kz/</a> A single and mandatory procurement portal for all public procurement	5

\*1: non-existent, 5 best practice

## PILLAR 1: REGULATION AND PROCESS (11/11)

### Assessment of Pillar 1: Regulation and Process



- There is room for improving the effectiveness of quality assessment for procurement, in other words, quality needs to be incorporated into the selection process for digital projects.
- It is a very favorable initiative to define “service model” which is actually promoting use of Software as a Service (SaaS) rather than full ownership of the digital asset. This allows a certain degree of freedom, flexibility, convenience and speed in process and it is more advantageous in budgetary terms. However, the procurement process in general, needs to be faster and flexible to cope with the changing needs and developments in digital domain.

## PILLAR 2: TECHNOLOGY INFRASTRUCTURE (1/3)

### Assessment of Pillar 2: Technology Infrastructure

Dimension	Comments	Overall Rating 1-5*
<b>Existence of broadband infrastructure</b>	The broadband infrastructure sufficient to support the development and use of various digital solutions – 86%	4
<b>Existence of cybersecurity infrastructure</b>	100% of respondents noted the need to invest in cybersecurity The need for investment is 3.29 (on a scale of 1-4, where 4 is the highest need and 1 is the least)	1
<b>Territory coverage of internet network (including rural versus urban)</b>	Respondents' answers were starting from 25-30% up to 90%	3

\*1: non-existent, 5 best practice

## PILLAR 2: TECHNOLOGY INFRASTRUCTURE (2/3)

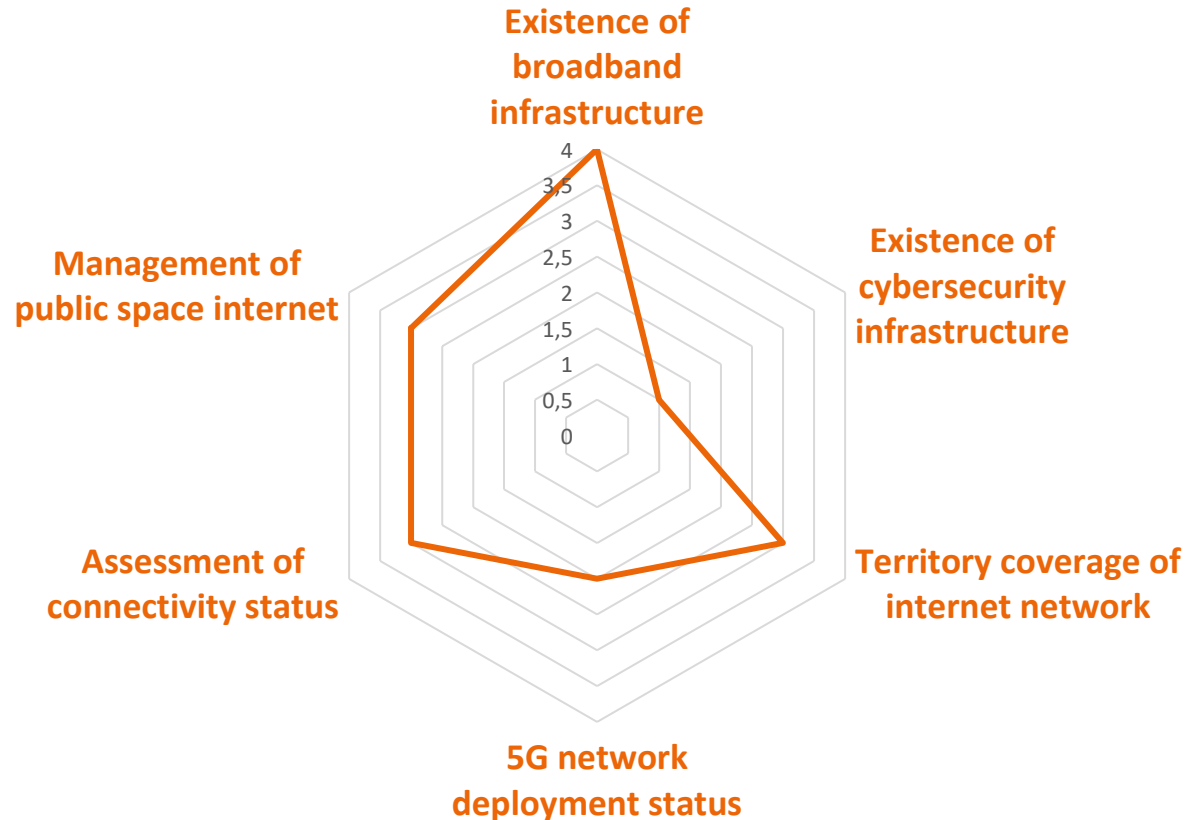
### Assessment of Pillar 2: Technology Infrastructure

Dimension	Comments	Overall Rating 1-5*
<b>5G network deployment status</b>	At the initial stage. There is a pilot in 3 cities: Nur-Sultan, Almaty, Karaganda	2
<b>Assessment of connectivity status</b>	Internet connection in general from 77 to 93% depending on the region, in rural areas - 72-85% (official statistics)	3
<b>Management of public space internet</b>	Public internet is available in BUS, public spaces, universities	3

\*1: non-existent, 5 best practice

## PILLAR 2: TECHNOLOGY INFRASTRUCTURE (3/3)

### Assessment of Pillar 2: Technology Infrastructure



- There is need for improving the cybersecurity infrastructure.
- Broadband infrastructure is well developed yet internet coverage is still not full and there is room to grow for 5G network deployment.
- Quality of internet needs to improve.

## PILLAR 3: ORGANIZATIONAL CAPABILITIES (1/2)

### Assessment of Pillar 3: Organizational Capabilities

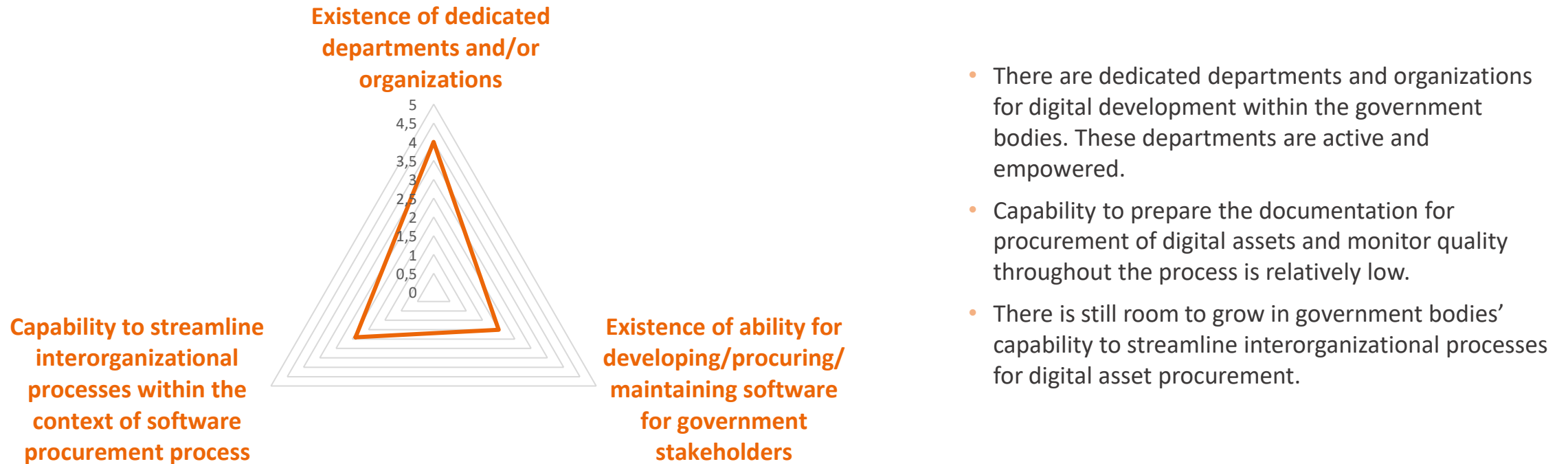
Dimension	Comments	Overall Rating 1-5*
<b>Existence of dedicated departments and/or organizations</b>	Each Ministry has a Deputy Minister for Digital Development There are Departments of Digital Transformation / Digitalization in each Ministry "Zerde" National Infocommunication Holding" JSC National Information Technologies JSC Subordinate bodies of Ministries Each Akimat (local executive body) has a digitalization department	4
<b>Existence of ability for developing/procuring/maintaining software for government stakeholders</b>	The average rating to the overall capacity of organizations to purchase / maintain software is 3 (on a scale of 1-4, where 4 is the highest need and 1 is the least)	2
<b>Capability to streamline interorganizational processes within the context of software procurement process</b>	The average rating to optimize interorganizational processes in the context of the software procurement process is 2.4 (on a scale of 1-4, where 4 is the highest need and 1 is the least)	2.4

\*1: non-existent, 5 best practice



## PILLAR 3: ORGANIZATIONAL CAPABILITIES (2/2)

### Assessment of Pillar 3: Organizational capabilities



## PILLAR 4: TALENT AND PEOPLE (1/3)

### Assessment of Pillar 4: Talent and People

Dimension	Comments	Overall Rating 1-5*
<b>Existence of talented workforce in the government</b>	<p>Very limited number of talented employees – 43%</p> <p>Limited number of talented employees – 14%</p> <p>Satisfactory number of talented employees - 43%</p>	2
<b>Existence of talented people in the key stakeholders</b>	<p>There are a lot of talented young people working in startups.</p> <p>*Additional resource: the key problem of state support is the complexity of the procedures for obtaining certain measures. Whereas, 43% of respondents consider the main barrier to be the lack of information about the tools and conditions of support. 42% of companies note that the problem is the lack of clarity of legal regulation in the relevant area.</p> <p>73% of companies consider it necessary to strengthen financial support (incentives, tax preferences, grants) for the subjects of the ICT industry. 57% note the importance of strengthening state support in the direction of human capital development (personnel training). 51% of respondents consider it important to direct state support to the development of infrared infrastructure. 47% of companies believe that it is necessary to improve state support in the field of stimulating research and innovation.</p> <p>*<a href="https://zerde.gov.kz/activity/analysis-and-development-of-ict/analytics/2019/">https://zerde.gov.kz/activity/analysis-and-development-of-ict/analytics/2019/</a></p>	4
<b>Ability to outsource to consultants or other agencies</b>	Outsourcing can be done in a limited number of cases (72%)	3

\*1: non-existent, 5 best practice

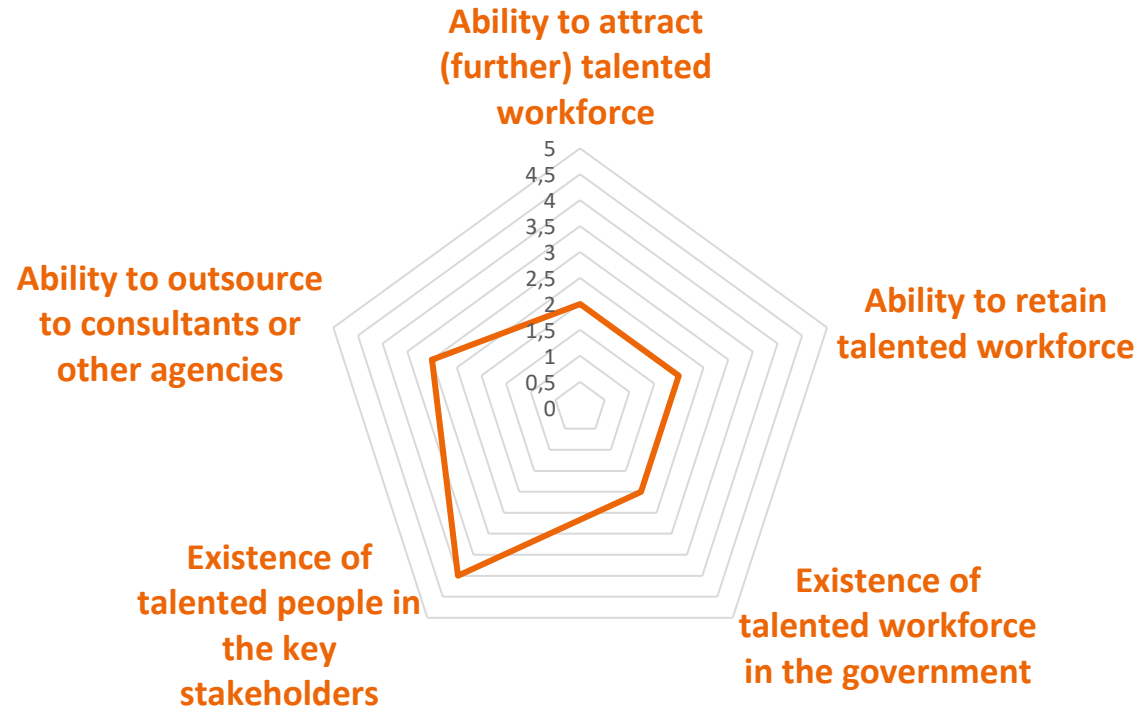
## PILLAR 4: TALENT AND PEOPLE (2/3)

### Assessment of Pillar 4: Talent and People

Dimension	Comments	Overall Rating 1-5*
Ability to attract (further) talented workforce	The average response is 2 (on a scale of 1-4, where 4 is the highest need and 1 is the least)	2
Ability to retain talented workforce	The average response is 2 (on a scale of 1-4, where 4 is the highest need and 1 is the least)	2

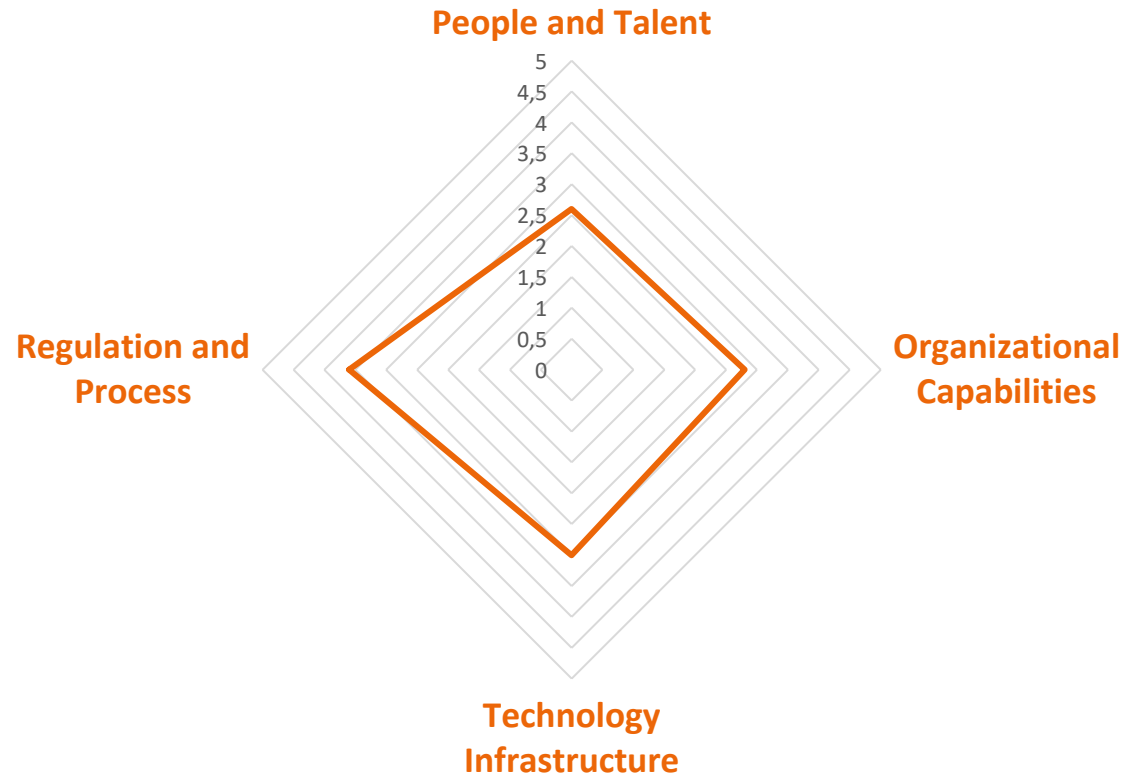
\*1: non-existent, 5 best practice

## PILLAR 4: TALENT AND PEOPLE (3/3)



- Government's tools (compensation, career, self-development, trainings, etc.) for attracting and retaining talent are limited. Hence the level of talent in the government bodies is not as high as the private sector.

# OVERALL ASSESSMENT



- There is room for improvement in all pillars.
- People and talent and technology infrastructure are key areas to invested.
- Organizational capabilities are mostly dependent on people and talent.
- Cybersecurity and internet coverage represent the largest opportunity for improvement in the technology infrastructure.
- On the regulatory process, quality needs to be incorporated into the selection process for digital projects.
- It is a very favorable initiative to define “service model” which is actually promoting use of Software as a Service (SaaS) rather than full ownership of the digital asset.

