



@UNICEF Kazakhstan/2020/Ruslan Kostrykin

UNICEF KAZAKHSTAN'S EXPERIENCE

AS A DIGITAL PUBLIC GOODS PATHFINDER COUNTRY

“It was a useful and timely experience for me as a Programme Officer managing the Innovation portfolio in our office. I learned about international digital public goods standards. Now, every time we develop new digital solutions, we make sure it follows these standards.”

***Raushan Ibrasheva, Former Programme Officer (Innovations),
UNICEF Kazakhstan***

SUSTAINABLE DEVELOPMENT GOALS (SDGs)



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



Reduce inequality within and among countries

OVERVIEW

In 2020, UNICEF Kazakhstan, in partnership with the Government of Kazakhstan, and with funding and support from the Digital Public Good Alliance (DPGA) launched an initiative focusing on Digital Public Goods (DPGs) and became a Digital Public Goods Pathfinder Country. Under this initiative, UNICEF and partners undertook a pioneering DPG needs assessment and supported the 'Accessible Kazakhstan' platform aimed at furthering the rights of children and people with disabilities to become the first DPG in Central

Asia to be included on the international DPG Registry. As part of the 'Accessible Kazakhstan' work, extensive training and outreach was also undertaken to raise awareness of disability rights. UNICEF Kazakhstan and national start-up champion Astana Hub developed and delivered a series of co-creation webinars to the start-up community across the country on DPGs and Open Source. Following the successful roll-out of the skills-building initiative for start-ups, the training was formally integrated into Astana

Hub's Acceleration Programme – the nationally recognized training process for start-ups to gain core business knowledge, skills, and practical capacity. The programme team also participated in the 14th pre-session of the UN Committee on the Rights of Persons with Disabilities with a presentation of two reports on accessibility in the Republic of Kazakhstan. As a result, changes were successfully made within Kazakhstan's 'Social Protection of People with Disabilities' legislation, marking a significant step forward for inclusion and disability rights. In 2022-2025 the programme aims to sustain the DPG development and certification, including working with at least one more DPG to apply for inclusion on the international DPG registry, supporting the design and delivery of MVPs (Minimum Viable Products) in alignment with the definition of Digital Public Goods and providing technical guidance to start-ups on the criteria and vetting process for DPGs, and adapting a child online safety DPG from another country platform on the international registry to the Kazakhstan context both to increase protection for children in the country and to maximize collaborative learning opportunities around DPGs.

WHAT ARE DPGS?

DPGs are “open-source software, open data, open AI models, open standards and open content that adhere to privacy and other applicable laws and best practices, do no harm, and help attain the SDGs.”

BACKGROUND

Digital Public Goods: the global picture

Digital Public Goods or DPGs have huge potential to accelerate progress towards achieving the Sustainable Development Goals (SDGs) and to bring about meaningful and lasting positive impacts on the lives of children around the globe. The concept of DPGs was consolidated in the UN Secretary General's [Roadmap for Digital Cooperation](#). The Digital Public Goods Alliance (DPGA) was created and endorsed by the Roadmap as a multi-stakeholder initiative that aims to 'accelerate the attainment of the

SDGs in low- and middle-income countries by facilitating the discovery, development, use of, and investment in digital public goods¹'. As a founding member of the DPGA, UNICEF has redoubled efforts to deliver its mandate and engage in ways that uphold its longstanding commitment to champion Open Source wherever appropriate and to developing a global catalogue of DPGs. This work furthers UNICEF's belief that developing healthy, equality-driven, and safe digital solutions has the potential to be pivotal in addressing the myriad social challenges faced today²³.



@UNICEF Kazakhstan/2021/Galina_Sorokina

Kazakhstan: the national picture

In 2017, Kazakhstan signaled its commitment to joining the global digitization movement by launching the Digital Kazakhstan national strategy. The latter aimed to strengthen the competitiveness of the Kazakhstani economy and improve quality of life by achieving progressive development of the country's digital ecosystem. Building on Digital Kazakhstan, in 2022 the Government introduced the "National Concept Digital Era lifestyle 'DigitEL'" as a response to modern challenges facing state and society. 'DigitEL' aims to ensure 100% coverage of the country with high-quality internet and 95% coverage with home broadband access networks by 2025, and to facilitate accelerated implementation of the SDGs through digitalization. The vision for Kazakhstan's future set out in the concept includes: 1) citizens will receive digital literacy, increased number of high-paying jobs, improved social well-being and environmental sustainability; 2) business, including micro-, small- and medium-sized enterprises will have

new opportunities to develop novel business models and grow their activities, to be included in global digital income streams, and to benefit from increased consolidation between economic sectors, and 3) 'digitally-first' government provides integrated end-to-end services that are more 'efficient, effective and transparent'⁴.

STRATEGY AND KEY ACTIVITIES

Strategic goals

The Digital Public Goods Pathfinder Programme aligns with UNICEF Kazakhstan's commitment to collaborate with businesses, start-ups, universities and young people on digital innovations to benefit children in support of the Digital Kazakhstan agenda⁵. It links to UNICEF's Global Innovation Strategy and Framework 2.0 and the commitment to developing, contributing, and using DPGs⁶. Finally, it furthers the UNICEF Strategic Plan 2022-2025, especially Goal Area 5, every child has an equitable chance in life.

KEY ACTIVITIES

DPG pathfinding pilot

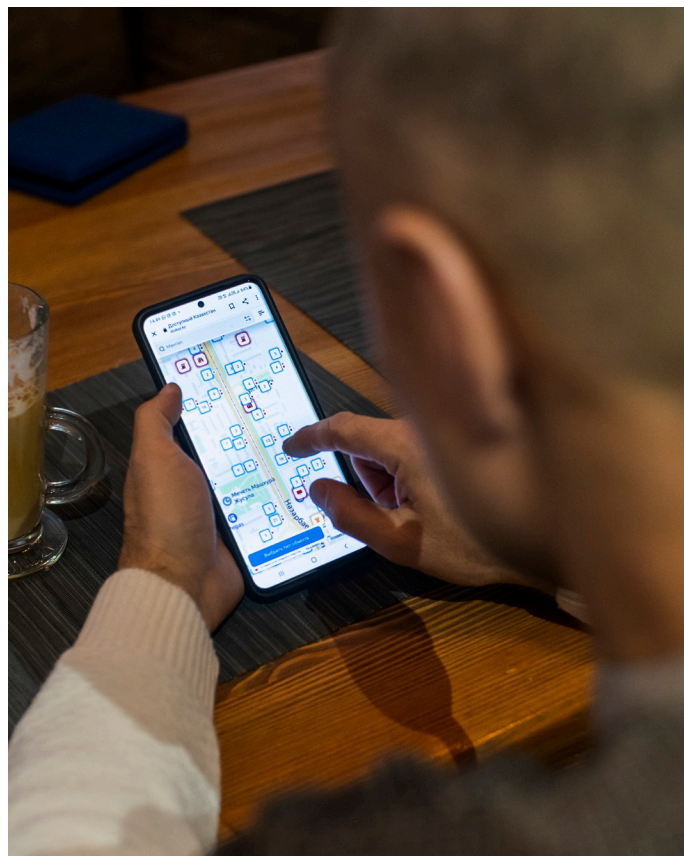
Since 2020 Kazakhstan has been one of ten pathfinding countries identified by the [Digital Public Goods Alliance](#) (DPGA) tasked with raising awareness of Open Source; strengthening the policy environment for supporting and developing Open Source solutions; engaging start-up and entrepreneurship ecosystems to consider Open Source as a viable approach and business model to develop products; and discovering and developing DPGs⁷. The DPG pathfinding pilot aimed to strengthen accessibility and learning through locally owned and developed potential DPGs in the country. Pathfinder countries collaborate with the DPGA to tailor relevant solutions to their own context and take them to scale through their national systems⁸.

Needs assessment of DPGs

The pathfinding pilot undertook the first ever DPG needs assessment to better understand the prevailing digital landscape and to understand

priorities of key stakeholders including state, private and civil society organization (CSO) sectors. In-depth interviews, surveys, and focus group discussions were carried out with 4 key ministries and 8 government affiliated agencies, 5 private organizations, 5 CSOs and 42 start-ups. Over 703 start-ups were identified with potential DPGs and a database created consisting of 444 organizations with available contact details and a stated wiliness to learn more about the DPGA. The needs assessment covered the following areas:

1. Digital economy and transformation (including digital budgetary processes)
2. Job matching, employability and skills
3. Education, early childhood development and school readiness (including girls' education and gender equality in education)
4. Accessibility and inclusion of children and people with disabilities
5. Digital health services for children, adolescents, and youth
6. Child online safety



”

Accessible Kazakhstan definitely changed the views of all team members towards people with disabilities. We realized how important it is to improve accessibility of facilities and services for people with limited mobility.

”

Dauren Salipov, Head of the ICT development team re-designing and building new functionality of the virtual map, Nur-Sultan

The results of this research were shared with the Government of Kazakhstan in December 2021 with the aim of informing and effectively shaping future programme activities for maximum impact.

Support to the development of “Accessible Kazakhstan” and “Okoo” as DPGs

UNICEF partnered with Astana Hub, the national start-up hub tasked by the Government of Kazakhstan with building and growing the country-wide digital ecosystem, to support the development and validation of two DPGs. The first, ‘Accessible Kazakhstan’, was undertaken with public fund Tandau and, alongside UNICEF and Astana Hub, financial support was provided by the Delegation of the European Union to the Republic of Kazakhstan and the US Diplomatic Mission in Kazakhstan. The initiative aimed to protect and uphold the rights of people and children with disabilities by ensuring equal access to facilities and services across the country in compliance with international standards. Intended usage also extended beyond people with disabilities to include a wide range of community members with limited mobility who together with people and children with disabilities make up 40% of the population: pregnant women, parents with small children in pushchairs, older people, walking frame and wheelchair users, people with temporary injuries, and children under seven years old. The platform was rolled out across 24 cities and 54 villages throughout Kazakhstan. The second, ‘Okoo’, is an educational platform

for teachers and children to learn programming skills. In 2021 the platform was integrated with an online course for teachers of primary and secondary schools that would better equip them with digital skills and to utilize modern online pedagogical tools and techniques to create individually tailored educational plans for children with special educational needs and those requiring additional assistance and support to fill knowledge gaps in on-line and blended learning. Under this project 14,413 teachers have received training to date.

Learning and capacity development for start-ups

Together with Astana Hub, and with input from UNICEF’s Office of Innovation and the DPGA, UNICEF Kazakhstan undertook a series of webinars that aimed to raise awareness of DPGs and their benefits and to build skills and capacity in this area amongst the start-up community. Seven co-creation webinars were held covering: defining DPGs, benefits of becoming a DPG, how to become a DPG and how to develop Open-Source products, AI in education, testing of tech solutions for accessibility, and building accessible tech solutions. ‘DPG Champions’ including Microsoft, Google, EPAM and Mersys took part in the webinars, sharing relevant work from their portfolios and demonstrating the tangible benefits of adopting Open Source.

”

Accessible Kazakhstan has become a Digital Public Good (DPG), which is open source and follows guidelines for universal design. Being part of the DPG Registry gives Accessible Kazakhstan regional visibility and opportunities to be contacted by funders and entities who want to support and relocate.

”

**Cheryl NG, UNICEF
Global Innovations Office, HQ**

KEY RESULTS

Accessible Kazakhstan officially recognized as a DPG on the international registry

“Accessible Kazakhstan” was the first information system in Kazakhstan to submit an [application](#) to the DPGA for validation and obtain the status of “ Digital Public Good”. It is now included on the international DPG Registry -the first in Central Asia to receive this validation. “Accessible Kazakhstan” provides the public with a virtual map of the country that displays information about the availability of public facilities. The map is an effective tool for anybody who wants to find out how accessible and safe venues are to visit, and to plan the best and most appropriate route of travel. The tool encourages people not just to be consumers or users of technology and DPGs but also creators who can affect positive change, in this case breaking down everyday barriers faced by people and children with disabilities and limited mobility. The data presented acts as a real time monitoring tool; any user can mark a public place, organization or institution on the map at any given time and share public information about its accessibility. This information is then depicted on the map using the international traffic light system to show how accessible a venue or location is. Each user can freely obtain statistical data on the number of public objects that are accessible or inaccessible in any specific locale within the country or across the entire country. The information system was developed in compliance with the Web Content Accessibility Guidelines (WCAG) 2.0. For visually impaired users, a separate version of the site was built in line with the international standard of information systems accessibility.

Training and awareness-raising to promote inclusion and accessibility

Accessible Kazakhstan not only sought to develop, launch and register a DPG that furthers inclusivity and accessibility. It also aimed to contribute to social and behaviour change efforts already being pushed forward by disability NGOs and activists through the following awareness-raising, engagement and training activities:

- 20 NGOs and initiative groups from 24 cities of Kazakhstan were trained on accessibility and subsequently took on the role of project partners across participating regions
- Tutorials were developed for assessment volunteers explaining how to create an appeal
- 20,800 objects were analyzed for accessibility compliance for people with limited mobility; the results were entered on the online accessibility map
- 900 active citizens, including 200 trained volunteers, participated in monitoring accessibility of facilities
- Between 2019 and 2021, more than 270 local service providers received accessibility recommendations based on the findings of accessibility assessments
- Awareness-raising videos on inclusivity aimed at changing perceptions around disability were produced and received over 2,000,000 views
- Child safety webinars were run for parents to improve parental knowledge on safe environments for children at home and on the move
- Training was provided for facility owners to increase knowledge and understanding on accessibility and inclusion, and to equip them with the knowledge, skills and practical tools to improve and adapt their premises accordingly.

My son was still using a wheelchair at that time. The map helped me a lot. Knowing in advance where you are going is very convenient. Myself, I have put some accessible sites on the map. Now the map has grown, just like my son. And this is very good. We travel frequently. And it is very important to have information about available sites in other cities

A mother of a child with disabilities describes her positive experience with ‘Accessible Kazakhstan’



@UNICEF Kazakhstan/2021/Galina_Sorokina

Legislative reform

The project team participated in the 14th pre-session of the UN Committee on the Rights of Persons with Disabilities with a presentation of two reports on accessibility in the Republic of Kazakhstan. As a result, changes were made within Kazakhstan's 'Social Protection of People with Disabilities' legislation. This included: new requirements to consult with representatives of registered organizations of people with disabilities for new infrastructure development, new requirements to ensure the provision of accessible transportation and facilities in public and private buildings such as airports, railway stations, bus stations and shopping centers, and mandating fines for failure to provide accessible transportation and facilities for people with disabilities.

DPG webinars integrated into Astana Hub's Acceleration Programme

The comprehensive DPG webinar training for start-ups was formally integrated into Astana Hub's Acceleration Programme, the nationally recognized training process for start-ups to gain core business knowledge, skills and practical capacity. This ensures ownership is extended beyond the programme parameters to be embedded at the national level and enhances sustainability. This success was documented by

the DPGA as a case study and released in early 2022 (see link in 'Additional Information').

DPG needs assessment validated at Government Level

The first ever [DPG needs assessment](#) undertaken in the country was completed and validated with the Government of Kazakhstan. The aim is for the report recommendations to be utilized by the Government to inform next steps on Digital Public Goods and digital infrastructure support and creation across the country.

CHALLENGES

Limited knowledge of DPGs and benefits of being an Open-Source product

There is a limited level of knowledge and understanding of DPGs and Open Source among the start-up community. This is understandable given that formal and coordinated efforts in these areas are still relatively new, and the concept of DPG has only been operationalized in recent years. Misunderstandings about Open Source were prevalent, including a belief that adopting an Open-Source approach was tantamount to compromising intellectual property. The webinars undertaken with Astana Hub made significant progress in this area; at the same time more work is required to continue supporting start-ups to build their knowledge and skills in this area.

Limited human resources in the DPG arena

Human resource capacity around DPG development and implementation is also limited and it was consequently challenging to identify partners to work with UNICEF under the pathfinding pilot. While some excellent partners exist, and indeed took part in this project, the pool of practitioners needs to be expanded at a reasonable rate for maximum scalability and impact.

COVID-19 and 'Accessible Kazakhstan' growth potential

The main challenge faced under the 'Accessible Kazakhstan' component was a 3-year moratorium on inspections of micro and small businesses

introduced by the Government as part of a series of measures to tackle the COVID-19 pandemic. The consequence of this has been and continues to be a decrease in appeals and appeal resolution, and therefore reduced action to improve accessibility.

We are very pleased that the Accessible Kazakhstan start-up project, a participant in the 9th stream of the Astana Hub accelerator, was recognized as the first Digital Public Good among the countries of Central Asia. This is a breakthrough. At the moment, we are hard at work to promote the Digital Public Goods among the Astana Hub community. In support of this, thematic webinars are being held on the standards and criteria of DPGs for start-ups and projects.

Zhanerke Egeubaeva,
Head of Information Office of
Astana Hub

Funding opportunities are insufficient

There are limited in-country funding opportunities for local DPGs focusing on social impact issues that are currently still in the early stage of their development in Kazakhstan. One possible solution could be to explore the potential for direct collaborations and partnerships with international organizations who are already well placed to financially support such work.

LESSONS LEARNED

Accessible Kazakhstan: Adapting to the concept of DPGs and knowledge absorption takes time

Adaptation to and understanding of DPGA requirements takes time, there is relatively little information available, and partners have different levels of knowledge and practice. Tools and approaches used under this programme to

help facilitate and expedite the learning process included: 1. drawing on inclusive video tutorials, 2. developing automatically filled checklists available on the 'Accessible Kazakhstan' map for volunteers and experts assessing the accessibility of facilities and services, which automatically converted information to the dedicated dashboard to make the process easier, and 3. video tutorials with step-by-step guidance on undertaking an assessment and making an appeal. These tools and approaches could be built on nationally and adapted to other country contexts to accelerate and scale-up work on DPGs and Open Source.

A comprehensive toolkit on Digital Public Goods for Government use would be beneficial

A comprehensive toolkit providing detailed information about key aspects of DPG development and fulfilment setting out how to develop and support DPGs, procurement, quality assurance, and monitoring would be valuable for furthering DPG development in Kazakhstan. In 2021 the DPGA compiled such a toolkit with inputs from UNICEF Kazakhstan, and an important next step will be adapting this to the Kazakhstan country-specific context for Government use.

Local language translation of DPG materials is a priority

Increasing understanding and capacity around DPGs among all relevant sectors and actors would be significantly strengthened by translating available guidance and training materials into Kazakh language to ensure they are fully inclusive and to meet the demands of a growing Kazakh speaking community.

There is scope to do more with DPGs for children in Kazakhstan

The needs assessment found that Kazakhstan has a relatively mature ecosystem for DPGs, but there is scope to deliver more specific DPGs for children and promote their accessibility for children with disabilities. Children's online safety

in particular needs attention, especially because there are currently no dedicated DPGs tackling this issue. Work going forwards will seek to address this. Building a strong local community of practice would help boost DPGs in the country.

Strengthening the sustainability of start-ups

The sustainability of start-ups is still relatively low for multiple reasons, including high staff turnover resulting in insufficient institutional memory and gaps in knowledge and capacity around fundraising and financial sustainability. To bolster sustainability start-ups could consider actively seeking core funding for teams responsible for product creation and delivery throughout the full timeline of development and diversifying funding modalities, including exploring support from Government and private-public partnership mechanisms.

NEXT STEPS

Sustaining DPG development and certification through additional initiatives awarded DPG status and placed on the international registry

“Okoo” is expected to be officially recognized as a DPG and included on the international registry during 2022. To further develop and maintain the roster of DPGs in Kazakhstan with a view to informing national and international communities of practice on progress, UNICEF will also embark on a partnership with Astana International Financial Centre to explore a sustainable technical solution for redistributing internet connectivity to benefit children in school and directly in their own homes. This work will include a testing of the solution that will open temporary access or traffic-bounded vouchers to the population in the remote areas that will be part of the testing using the regulatory “sandbox” governed by Astana International Financial Centre in line with DPG standards. This is expected to benefit up to 6,000 students who live in areas of the country with the highest number of unconnected schools.

Provision of technical assistance to potential DPGs and building capacities of national entities to comply with DPG standards for DPGA validation

Work going forwards will build on the already established Digital Education Lab to provide technical assistance to potential DPGs. The Lab was developed in 2019 with Astana Hub and enables partners from government, the corporate and private sector, CSOs and academia to collaboratively innovate and apply people-centered design to enable children and young people to access government services, to engage children and young people, and to amplify user perspectives in shaping data-driven public policy options. In 2022, UNICEF and partners will support the design and delivery of MVPs (Minimum Viable Products) in alignment with the definition of Digital Public Goods and provide technical guidance to start-ups on the criteria and vetting process for DPGs.

Adaptation of an external DPG to the Kazakhstan context

To showcase and draw on best international practices, UNICEF and partners plan to adapt a child online safety DPG from another country on the international registry to the Kazakhstan context. This will not only protect and promote the rights and safety of children in Kazakhstan but will also contribute to collaboration in the field of DPGs and learning on how countries can customize applicable solutions to scale through their national systems.

Advocacy and promotion of DPG Standard for national sustainability

Together with the Ministry of Innovation, Digital Development and Aerospace Industry, Astana Hub and other partner organisations, UNICEF plans to support the testing, launch and deployment of an Operational Toolkit and Accelerator Guide to fit the Kazakhstan context. UNICEF will undertake advocacy and technical assistance to support the Government to

introduce new standards into legislation and policy frameworks. Additionally, assistance will be provided to the Giga National Steering Committee led by the Ministry of Innovation, Digital development and Aerospace Industry in its objective to promote the development and sustainability of open-source solutions. UNICEF will ensure ongoing process documentation as well as case study development to support both nationwide progress and to share learning globally.

Additional resources and useful links

- Digital Public Goods Needs Assessment in Kazakhstan <https://github.com/dpgalliance>
- Assessment of Digital Public Goods in Kazakhstan, January 2022, [Assessment of Digital Public Goods in Kazakhstan | UNICEF](#)
- Case Studies from UNICEF Europe and Central Asia: Social And Behaviour Change Approaches, March 2022, <https://www.unicef.org/kazakhstan/en/reports/case-studies-unicef-europe-and-central-asia-social-and-behaviour-change-approaches>

Contacts for further information

Tatiana Aderikhina

*Education Specialist,
UNICEF Kazakhstan,
taderkhina@unicef.org*

Aigul Kadirova

Youth and Adolescent Officer
UNICEF Kazakhstan
akadirova@unicef.org

Endnotes

1. <https://digitalpublicgoods.net/blog/2021-digital-public-goods-alliance-report/>
2. <https://www.unicef.org/innovation/stories/open-source-digital-sovereignty>
3. UNICEF Global Innovation Strategy and Framework, 2020, p3
4. National Concept Digital Era lifestyle 'DigitEL', pp1-2
5. UNICEF Kazakhstan Country Programme Document, 2020, p7
6. UNICEF Global Innovation Strategy and Framework, 2020, p3
7. <https://www.unicef.org/innovation/stories/open-source-digital-sovereignty>
8. 'Why Become A Digital Public Good', Digital Public Goods Alliance