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Part 1

Executive summary
When the coronavirus disease (COVID-19) pandemic began in early 2020, the organization-wide digital transformation of UNICEF was already well under way, but the pandemic created urgent needs that accelerated aspects of the process. As child poverty indicators slid backwards for the first time in two decades and children’s education and development looked set to become one of the casualties of the pandemic, the UNICEF mission – to harness the power of digital technology and innovation to realize children’s rights around the world – became ever more pressing.

Changes that would have happened in time – such as the expansion and development of digital learning programmes for children who could not go to school – suddenly became lifelines for millions of pupils around the world. By the end of 2021, the Learning Passport, a digital platform powered by Microsoft Community Training and delivered by UNICEF that gives children access to their school curriculum online wherever they are, had reached more than 2 million children in 17 countries and was voted one of Time magazine’s top 100 innovations of the year. As the digital innovative partner in the Learning Passport, the Information and Communication Technology Division (ICTD) at UNICEF worked with Microsoft to develop the offline solution for the platform, a crucial component that allows countries to deploy the Learning Passport in areas with poor or intermittent connectivity and to serve the most in need.

This speed of change that we have witnessed in the past two years, in terms of the applications of technology in humanitarian and development settings as well as within UNICEF, has been unprecedented. In 2021, the second year of the COVID-19 pandemic, ICTD continued to underpin the entire organization’s work, ensuring the continuity of its programming in the face of ongoing social restrictions and increased needs. ICTD rapidly increased the scope of UNICEF virtual conferencing facilities in response to the pandemic; our remote services supported children’s courts in Bangladesh, facilitated education and health seminars in India, and allowed the organization to continue to function as a cohesive whole, hosting over 840,000 meetings over the course of the year. ICTD also increased connectivity and improved the resilience of UNICEF systems around the world; 50 offices migrated to the cloud in 2021, thus reducing their carbon footprint, improving their system resilience and simplifying their working environment.

UNICEF partnered widely and creatively – with universities, social media companies and polling platforms, to name a few – to stretch its capabilities and capacity for innovation. Through changes to UNICEF programming and operations, ICTD further improved the organization’s digital resilience, modernized its humanitarian responses and capitalized on the power of digital technology to improve health care for women and children and to strengthen social protection systems worldwide.

Social protection has come under the spotlight during the pandemic, as governments and other actors witnessed the vital role shock-responsive social protection systems play in cushioning their citizens and economies in times of crisis. In our case study from Yemen, we outline how UNICEF adapted the management information system behind the country’s cash transfer initiatives so that it could operate in two different local currencies, and improved real-time data visualization to improve responsiveness.

The internet presents young people with opportunities for learning and safeguarding, but it also presents grave and increasing risks. ICTD has worked to increase the number of safe spaces for children and girls online. This included updating chatbots with simple plug-ins so they are more empathetic and can quickly refer those experiencing traumatic or life-threatening situations to people who can help them. Another tool ICTD has developed is the E-referral Pathway App, which will ensure referral pathways for survivors of gender-based violence are up to date; Bangladesh and Zimbabwe were selected in 2021 to pilot the app, which was scheduled for testing in the first quarter of 2022.

ICTD has produced a range of successful apps and web-based platforms that put reliable, up-to-date information at the heart of the UNICEF response to the COVID-19 pandemic. These include tools for monitoring vaccination stocks and schedules, accessible information on COVID-19, and a period tracking app that is either operational or under development in over a dozen countries.

UNICEF is constantly evaluating its internal processes with a view to improving operational efficiency and
effectiveness. In 2021, the organization’s new invoice processing system saved more than 4,000 hours of working time through automation; 55 per cent of UNICEF purchase order invoices, which number more than 60,000 a year, are now handled by bots. The transformation of business processes continues apace across all UNICEF business areas, unlocking new time and cost savings as well as data sets and insights.

The climate crisis is, without doubt, a child rights crisis, exposing children to climate and environmental hazards, shocks and stresses around the world. To prioritize action for those most at risk, ICTD collaborated with partners to launch the Children’s Climate Risk Index in 2021, which provides the world’s first comprehensive view of children’s exposure and vulnerability to the impacts of climate change. Working with volunteer data scientists from Carnegie Mellon’s Solve programme, ICTD also started to explore the potential benefits and pitfalls of using frontier data to tackle air quality problems around the world.

In 2021, ICTD led the development of a transformational plan that will use digital as a key change strategy for UNICEF, in accordance with the new UNICEF Strategic Plan, 2022–2025. In addition, the OneDigital initiative, developed by ICTD to strengthen digital governance, both strategically and financially, was implemented to address the challenges of the organization's digital transformation. This initiative aims to integrate UNICEF efforts in Enterprise Architecture, information and cyber security, and digital governance and oversight across the organization.

In leading the development of these strategies, ICTD actively encouraged staff and stakeholders to embrace innovative technology in planning, delivering and scaling up UNICEF programming. Looking to the future, the division will continue to focus on organization-wide digital transformation, to improve digital governance and accountability, and lay the groundwork for a global, real-time data strategy while strengthening and enhancing the UNICEF technology investment portfolio.
Part 2

Context and trends
The coronavirus disease (COVID-19) pandemic has brought about a new reality in which organizations must strive to be more efficient, flexible and responsive – and digital technology is at the heart of this transformation. The lessons that the world has learned from the COVID-19 pandemic regarding efficiency, flexibility and responsiveness served to validate the decision by UNICEF, made prior to the pandemic, to relocate its Information and Communication Technology Division (ICTD) from New York to Valencia. The move has allowed UNICEF to decentralize, reduce costs and introduce new and more flexible working models that will allow it to focus more of its energy on results. In April 2021, UNICEF opened a new global hub for ICTD in Valencia known as the ICTD Digital Core. This new data centre and office will further modernize operational efficiency and effectiveness, strengthen global cloud infrastructure for remote working and business continuity, and advance information security at UNICEF.

The newly agile and digitally enhanced UNICEF, which puts digital technology at the heart of its programming, is rising to meet the many challenges facing children today. Digital innovation has the power to address the most pressing issues of our time, including the widening gulf between rich and poor, the impacts of climate change and rapid urbanization. As we enter the second decade of the century, it is clear that progress towards the global development goals will be contingent on its development and implementation. We will only achieve a world in which all children can thrive by pulling together, and organizations are increasingly collaborating to capitalize on the post-pandemic momentum behind international cooperation, multinational stakeholder initiatives, social protection programmes and digital public goods.

High-quality, open-source digital solutions to the world’s problems have taken centre stage over the past two years. The COVID-19 pandemic dealt a crushing blow to the most vulnerable children around the world, but the work of organizations such as UNICEF enabled millions of children to access education, cash transfers and engagement programmes, and galvanized international support for digital innovation and information management systems. Governments and other stakeholders have now witnessed how effectively and efficiently innovative digital technology can respond in times of crisis. An open, inclusive and collaborative approach – as outlined in the United Nations Secretary-General’s Roadmap for Digital Cooperation – is at the heart of our ability to ensure this technology is used to its full potential.
Part 3
Major contributions and drivers of results
Fostering a digital transformation in UNICEF programming

ICTD is at the forefront of an organization-wide digital transformation that is designed to support exponential growth in digital activities and develop new ways to leverage technology for children. UNICEF has reimagined information and communication technology (ICT), transforming it from a back-office support function to being at the forefront of its programming and a central part of its strategy. In 2021, ICTD continued to focus on digital innovation and technology for development, using ICT to explore new ways of delivering programmes with new partners and technologies.

Enhancing digital resilience

Having versatile, safe and secure knowledge and information systems is one of the four critical enablers of results as identified in the UNICEF Strategic Plan, 2018–2021. UNICEF pledged to increase connectivity and improve access to information and systems for all staff, regardless of location or circumstance. After the onset of the COVID-19 pandemic, this undertaking became more urgent, and ICTD responded rapidly. In 2021, in the face of increased demand for virtual conferencing, ICTD raised the capacity of the UNICEF virtual conferencing system to cope with larger audiences. Throughout the year, UNICEF has hosted over 840,000 meetings online, with a combined duration of more than 170 calendar years and over 7.5 million participants. Investing in remote conferencing has supported UNICEF work around the world: it has provided services to children’s courts in Bangladesh; facilitated education and health seminars in India; and allowed the organization to continue to function as a cohesive whole.

In 2021, 50 country offices migrated to cloud servers, decluttering their field offices, reducing their carbon footprint, improving their system resilience and simplifying their computing environment. This resulted in ICT staff spending more time adding value to the organization by supporting its programming, through innovation and Technology for Development (T4D). The UNICEF

ICTD: What we do

At UNICEF, technology, innovation and digital programming have become the collective responsibility of the entire organization. UNICEF has reimagined ICT as an organization-wide culture, which promotes innovative behaviours across the organization and leverages digital approaches to accelerate results. Thus, ICTD serves as a resource, facilitator and connector, fostering and nurturing innovation across the entire organization rather than working as an adjunct or on behalf of it.

- **The UNICEF digital transformation** supports UNICEF staff to increasingly enable, deliver and mainstream digital programming, services and innovations by building on their functions and skills, developing software/hardware, enabling automation and increasing agility, while transforming national programmes.

- **Technology for Development (T4D)**, a core function within ICTD established in 2017, enables and is enabled by the UNICEF digital transformation. T4D is dedicated to strengthening health, education, child protection and other systems to use digital technologies more effectively. ICTD works with UNICEF staff and supports their skills in embedding technology and digital innovation into their programming.

- **OneDigital** is a UNICEF initiative developed by ICTD to strengthen digital governance, strategically and financially, that will address the challenges of the organization’s digital transformation. OneDigital aims to strengthen information and cyber security; improve digital governance and accountability for global information systems and platforms; improve financial planning and centralize accountability and funding for the corporate digital component; and develop an organizational real-time data strategy. The initiative will guide the UNICEF digital transformation for years to come.
Stories from the ICTD global community – the people driving the digital transformation of UNICEF

Throughout the pages of this report, you’ll find examples of the dedication, commitment and professional expertise shown by our colleagues around the world in 2021. These accounts, written by members of the ICTD global community, reflect the passion we all share for achieving results through digital transformation – a passion that has only been heightened by the challenges of the COVID-19 pandemic.

The stories you’ll find in the coming pages also reveal the resilience and diversity that exist within our workforce. The ICTD global community – with its 586 staff members – currently includes staff of 140 different nationalities working across 125 countries. This diversity is also evident in the cumulative years of experience of our colleagues and the depth of their work. Together, we stand united in our collective efforts to support UNICEF country offices and programmes in delivering results for children and accelerating the organization’s digital transformation.
Who are we?

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of service: 5,028</td>
<td>Years of service: 1,277</td>
<td>Years of service: 6,306</td>
</tr>
<tr>
<td>Number of staff: 470 = Average</td>
<td>Number of staff: 116 = Average</td>
<td>Number of staff: 586 = Average</td>
</tr>
</tbody>
</table>

ICT colleagues in UNICEF programme countries

<table>
<thead>
<tr>
<th>General service</th>
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</tr>
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<tbody>
<tr>
<td>Industrial: 52</td>
<td></td>
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<tr>
<td>Programme: 255</td>
<td></td>
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<tr>
<td>International professional</td>
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<tr>
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<td>Programme: 115</td>
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<tr>
<td>National officer</td>
<td>113</td>
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<tr>
<td>Industrial: 5</td>
<td></td>
</tr>
<tr>
<td>Programme: 108</td>
<td></td>
</tr>
</tbody>
</table>

Where do we work?

- New York Headquarters
  - 70
- Other Headquarters
  - 117

- European & Central Asia Region
  - 21
- Latin America and Caribbean Region
  - 52
- Middle East and North Africa Region
  - 65
- West and Central Africa Region
  - 85
- Eastern and Southern Africa Region
  - 82
- South Asia Region
  - 39
- East Asia and Pacific Islands Region
  - 85

**TOTAL: 586 people of 140 nationalities in 125 countries**
Part 3: Major contributions and drivers of results

2021 Annual Report

Digital platforms – such as Learning Passport, HOPE, PrimeroX and Covax – all benefited from application platform services that facilitate the deployment of apps and improve their stability and security. Throughout the year, UNICEF cyber defence systems detected and defeated a number of cyber threats, including the Log4J attack. A new cybersecurity programme that will elevate the organization’s security was approved and will be implemented between 2022 and 2025. ICTD estimates that standardized network-edge security, which protects the vulnerable outer reaches of the UNICEF network, has resulted in a cumulative saving of US$2.1 million to date.

Modernizing humanitarian preparedness and responses

During 2021, ICTD maintained its focus on the organization’s global response to the COVID-19 pandemic. Despite travel restrictions, and to ensure the continuity of life-saving services, UNICEF was able to provide direct support for emergency preparedness and responses in Afghanistan, Armenia, Eritrea, Ethiopia, Haiti, Indonesia, Lebanon, Madagascar and Mongolia.

In Mongolia, UNICEF led the Emergency Telecommunications Cluster (ETC) and supported a preparedness exercise with the government.

In Armenia, Eritrea, Indonesia and Madagascar, UNICEF accessed the global emergency stockpile to support response efforts and provide life-saving services.

UNICEF continued to improve its ability to leverage and deploy ICT in emergencies to enhance its preparedness and responses across the humanitarian ecosystem. In an emergency, one of the first things to be lost is connectivity. For this reason, ICTD trains its staff to use mobile satellite services as well as alternative power sources. In 2021, the ICTD team adapted and developed the Emergency Telecommunications Training (ETT) e-Learning Series for the post-pandemic era, so that it is now entirely online. The course comprises one introductory and four core e-learning modules and has so far been accessed by 1,045 learners (244 UNICEF staff and 801 from other humanitarian partner organizations).

To streamline and strengthen UNICEF humanitarian response efforts, ICTD collaborated with the Division of

Stories from the ICTD global community – the people driving the digital transformation of UNICEF

Christian Alvarez, Business Relationship Manager, Project Management Unit, UNICEF Yemen

As a data specialist in Yemen, I’m always looking for ways to innovate while constantly adapting to the volatile context. In recent years, I have led an eight-member team in developing and maintaining the Yemen cash transfer system, dubbed ‘Yumnn’. The infrastructure we built enables us to get money to over 9 million beneficiaries in war-torn Yemen. This innovative solution includes a web and a mobile application and is integrated with financial services providers, telecommunication providers, business intelligence tools and mobile device management utilities. In 2021, the Unconditional Cash Transfer Programme, as it’s called, was the backbone for three rounds of payments to over 9 million beneficiaries. We also developed cash initiatives to support the health, education and other social service practitioners who kept the country’s services functioning during the pandemic. It has been very rewarding and exciting to be part of such a groundbreaking project within UNICEF.
Emergency Programmes to revise UNICEF emergency procedures and the ICT component of the Core Commitments for Children in Humanitarian Action, which constitute the UNICEF central policy on upholding the rights of children. ICTD actively participated in 230 internal and external emergency coordination activities, providing technical guidance to staff and partners in the field.

**Advancing the role of digital health**

In 2021, in response to the COVID-19 pandemic, UNICEF led the largest vaccine procurement and supply operation that the world has ever seen, on behalf of the Global COVAX Facility. In Jamaica, the pandemic had a devastating impact on children. UNICEF adapted its programming quickly in support of the national health ministry, and Jamaica became the first country in the Caribbean to receive COVAX-procured vaccines. UNICEF and partners devised a digital health platform that supported the vaccine roll-out. The secure, open-source platform is called CommCare and was developed by the long-time UNICEF partner Dimagi. It enables health workers to monitor screening, immunization and follow-up, and allows the Jamaican health ministry to organize and record appointments, patient screening, administrators’ checklists and documentation, and other reporting for the COVID-19 vaccine. UNICEF handed CommCare over to the Jamaican government after a two-week transition period, and it is currently in use across all of the country’s immunization sites.

In Guatemala, UNICEF brought together the Ministry of Health and the Academy of Mayan Languages to develop an interactive digital personal assistant, translator and virtual information centre for health personnel. This has enabled the health ministry to provide services to adolescent Mayan girls in the Q’eqchi’ and Poqomchi’ linguistic communities, sharing messages on pregnancy prevention, obesity and sexual violence.

Access to fast and reliable data is essential for quick and efficient vaccine distribution. In the Philippines, where information systems are fragmented and data delays common, UNICEF introduced a digital monitoring tool to speed up access to quality data. Real-time Vaccination Monitoring and Analysis (RT-VaMA) uses Open Data Kit technology to allow data collection on smartphones and other mobile devices. RT-VaMA informs national vaccine stock levels and identifies bottlenecks, turning data into easy-to-understand dashboards, and it is now the government’s monitoring tool of choice for immunization campaigns. The Department of Health continued to use the system for polio and measles-rubella campaigns in 2021, reporting on the coverage of 8.4 million children for the measles-rubella vaccine and 5.9 million children for oral polio vaccine. Also in the Philippines, the Water and Sanitation for Health Facility Improvement Tool (WASH FIT) was adapted into a digital platform, using a suite of tools that give health workers offline access to the WASH assessment form and a real-time online dashboard for quick analysis.

**Improving learning outcomes for children and girls**

**Closing the gender digital divide**

The digital divide is the gap between those with regular and effective access to technology and those with limited or no access at all. In general, girls have less access to technology and the internet than boys – in particular in developing nations. In 2021, the gender section of the UNICEF East Asia and Pacific Regional Office (EAPRO) led research and forged partnerships to generate evidence and insights that will help to close the gap for girls, including the publication of a literature review and a discussion paper. To encourage digital solutions that meet girls’ digital realities, UNICEF developed the GenderTech Toolkit. This outlines best practices to support innovators, designers and implementers of digital products and services to benefit girls and young women equally and help close the gender digital divide. The toolkit provides resources for practitioners on how to build digital solutions to girls’ digital realities; creating digital solutions with girls; and conducting user testing of digital products with girls.

For girls in the developing world, starting their period can come as a shock; the subject is so laced with shame and taboo that they often do not know who to turn to for support. To educate girls about their bodies and their symptoms, UNICEF developed Oky, a mobile-based period tracking app, in collaboration with 400 girls in Mongolia and Indonesia. Oky is an approved digital public good that illustrates how innovative technology
Case study 1: Yemen – Using technology to strengthen social protection systems

UNICEF Yemen expanded its cash transfer initiatives to support the most vulnerable and maintain their access to essential social services by developing additional modules for the Yummn management information system, which were tailored to the specifics of each initiative. These additional modules secured beneficiary data with the verification of identity and eligibility, and included payment and grievance processes for the various cash projects. These modules helped UNICEF Yemen to increase the number of cash transfer initiatives, providing innovative solutions to the challenges of this constantly changing operating environment. For example, to support a new foreign exchange strategy operating with two local currencies, a module was developed to automatically calculate payments using different exchange rates for different regions of Yemen. Real-time monitoring was also improved through data visualization for programme officers.

Sultan Abdullah Ali, 26 years old, receives cash provided by UNICEF’s Cash for Nutrition Programme.

Shoqi, 63, a beneficiary of Yemen’s Unconditional Cash Transfer Programme, lives in Aden, where he is responsible for 13 members of his family, including young children, his elderly mother, and a brother who cannot work due to a health condition. Shoqi himself suffers from a heart condition and struggles to make ends meet. “Now that I receive cash, it is of great help to us. It helps me with treatment and medicines,” says Shoqi. He takes the responsibility of caring for his family very seriously and carefully distributes the money among family members to ensure all of them have enough food and medications to last until the next transfer.
can tackle both pervasive gender discrimination and the gender digital divide, increasing girls’ digital literacy while teaching them about their body, puberty, and sexual and reproductive health. The app is intentionally light, because girls typically use low-end phones with minimal storage space; simple to use, because girls typically have less experience than boys with digital devices; and password protected, because phones are often shared. In 2021, Oky was scaled up to new markets in the East Asia and Pacific region and around the world. By the end of the year, deployment and localization of the app was under way in Burundi, Kenya, Kyrgyzstan, Nepal, Papua New Guinea, the Philippines, Ukraine and the United Republic of Tanzania, and had launched in Mexico and West Bengal, India.

Creating safer spaces for girls

Women, young people and children often use chatbots to disclose gender-based violence or to ask for help with traumatic or life-threatening situations—even when these chatbots are not designed to provide such support. The Safer Chatbots project created three models for safer chatbots for women and girls, to be used by UNICEF and any other providers of automated, interactive messaging services. The gender section of UNICEF EAPRO developed these models to suit chatbots of all levels—with or without artificial intelligence (AI). They are compatible with popular chatbot-building platforms such as Turn, TextIt, RapidPro and BotHub but platform-agnostic. UNICEF EAPRO also teamed up with GirlEffect and Weni to develop an open-access AI model for more sophisticated and accurate responses to users in distress. This plug-in solution is available for reuse and adaptation free of charge. Organizations from the region and around the globe have already reached out to UNICEF EAPRO about implementing the safeguarding mechanism in their chatbots.

In 2018, a pilot of the first virtual safe space (VSS) for adolescent girls in Iraq and Lebanon aimed to provide adolescent girls with information on sexual and reproductive health. It became apparent that adolescent girls and women also lacked information on gender-based violence and required an interactive platform where they could have a voice. Using feedback from
the pilot, UNICEF has worked on a new platform (VSS 2.0) featuring highly interactive content (TikTok-like videos, podcasts and quizzes), which is being rolled out in Ecuador and Iraq. This updated version of the VSS used human-centred design methodology to delve into the needs and desires of women and girls to design an accessible and secure platform.

In humanitarian and fragile contexts, access to gender-based violence services by survivors can be life-saving, but service providers often do not know where to refer people when they seek help. UNICEF has developed the E-referral Pathway App (eRPW) to tackle this problem. The app enables remote updating of referral pathways and services to make information on available services more widely accessible.

- Bangladesh and Zimbabwe were selected for the eRPW pilot to demonstrate its capabilities, limitations and gaps in the context of low- and middle-income countries, and to set up the technology for wider and more effective adoption.
- UNICEF hired local human-centred design experts to ensure that the product meets the needs of its users.
- The Minimum Viable Product for eRPW was scheduled to be ready for testing in Q1 2022.

In Egypt, Dawwie is a multi-stakeholder coordination mechanism to advocate for girls’ empowerment. It brings together individuals, families, communities, leaders and young people to change behaviours and attitudes that hinder girls in achieving their full potential. Storytelling and digital literacy support girls in overcoming social barriers they might face at household and community level, and digital literacy training provides essential skills for digital empowerment – such as communication, critical thinking, negotiation, and safety online – with a specific focus on how technology can promote gender equality. It is available to girls and boys both offline and online though a number of channels; the Dawwie Facebook page has reached over 20 million people. In 2021, over 9,000 youths registered for the free online digital literacy training, and 3,000 of them have completed the training to date.

**HealthBuddy – using AI to tackle misinformation about COVID-19**

To disseminate facts about COVID-19 and promote protective behaviour, the UNICEF Europe and Central Asia Regional Office and the World Health Organization Regional Office for Europe co-launched HealthBuddy, a web-based chatbot that uses AI to answer the public’s questions about COVID-19. Clear and simple content communicates the latest scientific and evidence-based information about COVID-19 and is reviewed and updated continually. The chatbot was made available on social media messaging platforms (e.g. Facebook Messenger, Viber, VK, Telegram and Whatsapp) and as a mobile application, HealthBuddy+, including features such as polling and a rumour-reporting tool. UNICEF also made HealthBuddy+ available to national authorities and public health institutions for tailored use in their countries. HealthBuddy currently supports 20 languages. To date, more than 600,000 users have accessed the chatbot, and more than 4.5 million interactions have been recorded.

**Increasing access to learning via digital tools**

In 20201, UNICEF Lebanon introduced a new remote/blended learning modality for non-formal education that helps children with learning, psychosocial well-being, health awareness and inclusion despite school closures. Data are collected through the Child Level Monitoring (CLM) platform, which reports on children’s performance...
using biodata as well as assessment results and referral pathways that permit the tracking and monitoring of children as they progress through their education. CLM is currently the only information management system that collects data on out-of-school children enrolled in non-formal education programmes in the country, as well as children enrolled in retention support programmes.

Founded in 2007, Plan Ceibal is a multi-stakeholder public policy programme in education and innovation in Uruguay that seeks to integrate pedagogy and technology. In 2021, an initiative called ‘Puentes digitales para la equidad educativa’ raised US$1.5 million to increase Plan Ceibal’s scope and create a replicable model for others to implement. Under the newly enhanced system, children with disabilities can now use Plan Ceibal’s platform thanks to ‘digital ramps’, including specific devices and software.

In Kosovo, a digital distance learning platform was developed for children under 6, their parents and educators. The platform engages parents and children in early childhood development activities and provides a range of resources: instructional videos on child development, play and learning activities that promote parental engagement in children’s health and development, and thematic activities, including content that engages fathers. The platform has not only provided children with the opportunity to continue their preschool education but has also expanded educational opportunities for children who had not been enrolled in preschool before COVID-19. To date, the platform has reached 220,000 unique users and recorded 2.7 million visits. Platform activities were also broadcast daily on national television. UNICEF also supported the Government of Kosovo in developing a case registry and reporting module that provides real-time data on detected and suspected cases of COVID-19 in schools.

Stories from the ICTD global community – the people driving the digital transformation of UNICEF

Yumiko Shinya, Innovation Specialist (T4D and Youth), UNICEF Pacific

Given the geographic and connectivity challenges in the Pacific Island countries, simple mobile technology has the potential to make a big difference, especially in light of the COVID-19 pandemic. Since late 2017, when I joined UNICEF Pacific, RapidPro and U-Report have expanded widely to support many programmes in different countries. I helped the health section to design a monitoring mechanism for a remote COVID-19 training programme for nurses using RapidPro that is applicable to all 14 countries in the Pacific. The first U-Report initiative kicked off in the Pacific in 2018–2019; four countries now have functional platforms, and at least two more countries are in the pipeline. U-Report collects the voices of young people to influence policymaking, but also provides space for young people to devise their own activities. It’s been really important for engaging the community in the COVID-19 response and improving their disaster preparedness. In addition, we introduced new options for real-time monitoring to the region, including using Ona for real-time data collection, and I also helped to develop an integrated data management mechanism bringing together various available tools. I take a human-centred design approach, working with different programme sections and government partners to achieve a complete digital transformation.
Case study 2: Global – Learning Passport

At its peak, the COVID-19 pandemic left nearly half a million children without access to education through remote or digital learning programmes. While for some, face-to-face lessons simply moved online, for those without a stable internet connection, education came to an abrupt halt. Rather than accept this, UNICEF teamed up with Microsoft to rapidly scale up the Learning Passport, which gives students app- or browser-based classes that do not require a consistent internet connection. ICTD was the digital innovative partner in the initiative, developing ground-breaking capabilities in collaboration with the project owner, UNICEF Education.

An innovative and flexible solution to remote learning, the Learning Passport was initially devised in 2018 for displaced youth. Teachers upload the local curricula – in their own language and for whatever subject and age group they teach – then students access it whenever they can, via tablet, computer or phone, and download the lesson they need.

“The global disruption to education caused by COVID-19 has been unparalleled, affecting 1.6 billion learners at its peak and leaving 463 million children unable to access digital or remote learning programmes. To ensure the continuity of learning for children, we must reimagine education and transform education systems.”

– Robert Jenkins, Global Director of Education and Adolescent Development at UNICEF

Voted one of Time magazine’s ‘best inventions of 2021’, the Learning Passport platform has reached over 2 million children across 17 countries.
In 2021, ICTD worked with Microsoft to develop the offline solution for deploying the Learning Passport in places with poor or intermittent connectivity. ICTD took the lead in the design, hardware identification, solution implementation and establishment of long-term agreements with vendors that provide preconfigured, provisioned and ready-to-use devices to any country office.

Poor infrastructure and bad or no connectivity hinder access to education for the most in need, so the offline solution adds a vital component to the Learning Passport offering. The offline solution offers the same online experience but runs from a low-powered hub that contains the appropriate curriculum. It saves the learner’s activity and uploads it whenever it is connected to the internet.

In Egypt, in collaboration with Catholic Relief Services, CARE International and the Education Working Group, UNICEF introduced the Learning Passport for refugee and migrant students. Four learning hubs were established, and 6,300 tablets were distributed to refugee and migrant students, and 400 tablets to teachers, all including internet packages. An estimated 15,000 children in Egypt accessed the Learning Passport and were able to continue their learning in 2021.

In Jordan, UNICEF distributed tablets, including data bundles, to 9,000 Syrian refugee households with school-age children through the Makani programme. The tablets were used as a communication tool between Makani facilitators and the students to provide remote learning support during school closures. A mobile device management system allowed the country office to monitor usage, add content remotely, limit access to non-educational content and prevent the loss or sale of the tablet.

In Lao People’s Democratic Republic, UNICEF developed the digital platform Khang Panya Lao (‘wisdom warehouse’), based on the Learning Passport. By providing offline access to downloadable content, the platform allows learning to continue during school closures and can supplement face-to-face classes and learning at home. The platform also provides resources to support the work and professional development of teachers, principals, pedagogical advisors and technical staff, and enhances the digital skills of its users. The platform can be used for blended learning, as a teaching tool in schools, and as an additional resource for learning at home.

As an extraordinary emergency response to the global pandemic, the Learning Passport underwent rapid expansion to enable countries with a curriculum capable of being taught online to facilitate online learning. It is now live in 26 countries, including Egypt, Honduras, Lao People’s Democratic Republic, Nigeria, Poland, Timor-Leste, Uzbekistan and Zimbabwe, and 25+ countries are in various stages of the deployment process.
Stories from the ICTD global community – the people driving the digital transformation of UNICEF

Laure Fogain, ICT Specialist, UNICEF Niger (former ICT Officer, UNICEF Cameroon)

After the outbreak of COVID-19, I worked with the Education sector at UNICEF Cameroon to provide internet access to school children – while also contributing to a greener environment. We constructed a hub from old and unused containers; chairs, tables and other seating were made from wooden pallets. We installed solar panels to power the hub and opted for a mobile data solution that was easier for the community to manage and maintain. We provided all equipment – tablets, computers, printers and a projector – after consultation with the teachers and pupils. During the design phase, I was instrumental in pushing to have a local startup as an implementing partner to support the teachers’ and pupils’ learning. The startup we worked with was brilliant, ensuring the community could make full use of the opportunity they’d been given.

Engaging youth through innovative digital tools

In 2021, U-Report grew from 6 million users and 12 new country platforms to 18.8 million U-Reporters globally and 88 national platforms. The platform consolidated over 30 million responses to 500 or more polls, chatbots and other messages on topics such as migration, health, nutrition, education and climate, in collaboration with numerous divisions and teams. U-Report continued to demonstrate its relevance and potential for youth engagement in programme delivery, advocacy and emergency response, as follows.

- U-Report’s COVID-19 and COVID-19 vaccine chatbots have been accessed by over 8 million people across 49 countries.
- Around a million U-Reporters engaged on topics such as the COVID-19 vaccine, the UNICEF Strategic Plan, 2022–2025 and resilience.
- U-Report expanded its work in emergencies, supporting efforts in Afghanistan, Côte d’Ivoire and Haiti, which also boosted the scale of these platforms.
- U-Report made significant improvements to user experience with updates to the U-Report website and the development of an online app to facilitate youth participation.
- U-Report’s partnership with WhatsApp enabled it to scale up and partially recover re-engagement possibilities that were lost due to Facebook and WhatsApp policy changes.
- At the Africa–Europe Youth Summit 2021, U-Report youth ambassadors called on decision makers to take urgent action in several key areas, building on the 2020 #YourVoiceYourFuture campaign.

UNICEF in Europe and Central Asia has developed an innovative mobile parenting app called Bebbo. The app provides parents and other caregivers of children aged 0–6 years with expert advice and tools related to child health and development, from nutrition and breastfeeding to early learning and the value of play, responsive parenting, protection and safety, as well as parental
well-being. It enables parents to track key developmental milestones, get ideas for play, and record immunizations, health check-ups and other key events. Bebbo has achieved over 30,000 downloads and continues to reach new parents every day.

In Malaysia, @KitaConnect is an online engagement programme that builds the skills of young people around mental health and well-being, supports their learning and encourages civic engagement. The programme reached 615,000 participants in 2021, offering them creative online sessions and activities on various topics, such as mental health, social issues, self-development and soft skills. As part of the programme, @KitaConnect Youth Chats are discussions run by youth for youth, meaningfully connecting young people with their peers and providing them with a platform to share their thoughts on different subjects.

**Augmentative and alternative communication technology – giving every child a voice**

In Bulgaria, the number of children with disabilities and special needs in school and preschool is rising, and for the majority of those children communication with their

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**Alphonse Nyandwi, ICT and T4D Specialist, UNICEF Rwanda**

In 2021, I coordinated the adoption and adaptation of Giga in Rwanda, an initiative to connect every school in the country to the internet. Our goal was to map connectivity demand in schools, equip schools with fit-for-purpose and fit-for-use devices, train teachers and provide relevant content and learning platforms. Giga found that 43 per cent of the 4,234 mapped schools did not have access to the internet. Using an open, transparent and competitive procurement process, Giga Rwanda challenged the global market to come up with innovative business models for affordable, reliable and secure internet connectivity that meets child online protection guidelines. This resulted in substantial private sector investment and support, which increased connectivity speeds by 400 per cent and reduced the potential costs by 55 per cent. We piloted Giga in 63 schools and managed to equip over 40,000 students and teachers with access to quality teaching and learning, and over 70,000 households in the local community with access to information, opportunity and choices. Now that these schools have connectivity, we’re looking to make that connectivity sustainable. We’re conceptualizing different ways of integrating digital tools into learning and teaching, and developing a sustainable financing model that will continue to leverage private investment in meaningful school connectivity.
peers is severely limited; augmentative and alternative communication tools typically used to support non-verbal children are not widespread. To counter this, UNICEF Bulgaria is piloting Cboard, an open-source communication tool that helps children and adults with speech and language impairments to communicate through pictures and a text-to-speech feature. In the second half of 2021, Cboard was introduced in Bulgaria and North Macedonia in three languages, with further enhancements to the Cboard web application under way.

UNICEF teamed up with Gallup to create the Changing Childhood Project, a multigenerational, international survey that explores what it means to be a child in the twenty-first century. In partnership with the Office for Global Insight and Policy, ICTD launched an interactive microsite that has gained worldwide recognition, attracting close to 900,000 visitors in the first three months. Changing Childhood has featured in the New York Times, the Guardian, the Financial Times, Politico and others, kicking off conversations with policymakers and businesses about child welfare around the world. By the end of 2021, some 21 countries were participating, and the survey had received over 22,000 responses.

**Strengthening operational efficiency and effectiveness**

**Enhancing child protection data management**

In 2021, Primero, the open-source software platform for humanitarian protection and social welfare workers, expanded across Cambodia to respond to child protection cases, including COVID-19. The platform is interoperable with other systems, enabling secure referral of cases between government social workers and non-governmental organizations.

In Guatemala, the amount of child sexual abuse material being sent or received online rose to over 4,000 images per month in 2020, almost double the rate of the previous year. After the pandemic, reports indicated that ‘production of pornography’ became the most common cybercrime in the country, posing a serious threat to children aged 10–15 years. To tackle this, UNICEF worked with partners to develop three cyber tools: a web page, an app called Me Conecto Sin Clavos, and a national counselling mechanism called Tu Amig@ SVET. These provide girls, boys, adolescents, parents and caregivers with information about social violence, exploitation and human trafficking on the internet through videos, Q&A games and other app content. The counselling mechanism was developed during a hackathon for open innovation sponsored by the private partner, Tigo, which incubated the winners to build a Minimum Viable Product. Tu Amig@ SVET is synchronized with a RapidPro database using U-Partner, and psychologists from Guatemala’s Secretariat against Violence, Exploitation and Trafficking (SVET) manage it.

In the United Republic of Tanzania, the Simplified Birth Registration System that was first introduced in 2013 continued to proliferate; by the end of 2021, 22 out of 26 regions were using the system. It has made birth registration more accessible in a country with some of the lowest birth registration rates in the world. With support from Tigo, a local telecommunications company, it uses innovative mobile data collection technology. These data are then uploaded and sent to a central database in real time. The system has helped raise the overall registration rate in target regions from 13 per cent in 2013 to 65 per cent by the end of 2021. The Simplified Birth Registration System is being cited as one of the best examples of human-centred design for civil registration and vital statistics in the region.

Before this system was introduced, registration could only take place at the district headquarter town. Now, registration points are established at health facilities which provide reproductive and child health services, and at the community ward executive offices, in line with the government policy of decentralization through devolution."

– Professor Palamagamba Kabudi, Minister for Constitutional and Legal Affairs in the United Republic of Tanzania
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Nwando Dike, T4D Specialist, ICTD Digital Centre of Excellence, Nairobi, Kenya

The COVID-19 pandemic amplified the challenges that many country offices faced in accessing accurate real-time data to strengthen their programme design. To address this challenge, my team – the Field Solutions Unit – provided country offices with dashboards and tools to improve data analytics and data accessibility for humanitarian action, for children and risk communication and community engagement (RCCE) initiatives. In the dashboard planning and design phase, I engaged in consultations with key stakeholders and end-users to understand their data needs and discuss features that could streamline data interpretation. Then, once the prototype was released, I launched user acceptance testing sessions to ensure that the dashboards met the requirements and needs of a diverse community of end-users across different regions. After the R3D beta launch, I responded to any technical challenges faced by users. The dashboards provided country and regional offices with insights to deploy more strategic and socially relevant (i.e., in terms of culture, age and gender) COVID-19 chatbots and other messaging services for vulnerable populations.

Improving results for children through frontier innovation

In June 2021, UNICEF Philippines announced its first Digital Public Good Pathfinding Pilot. UNICEF Philippines, together with the Office of Innovation and the Digital Public Goods Alliance, is using a digital public good, the Advanced Early Dengue Prediction and Exploration Service (AEDES), to monitor dengue cases. UNICEF Philippines is working with its partners to implement the pathfinding pilot in select cities in the country.

In 2020, UNICEF and Meta’s Data for Good team worked together to launch the COVID Mobility Insights Platform, which provided decision makers with real-time data on how physical distancing measures were working, how they related to the rate of transmission, and what the impact was on the most vulnerable. The platform based its information on anonymized Facebook users’ movements. In 2021, this technology expanded to a dozen other countries in the region and beyond. It is now mainly used by UNICEF country offices and in emergencies such as Typhoon Odette in the Philippines to track population displacement, something it does with unprecedented accuracy and swiftness.
If just 1 per cent more people stayed at home, the daily number of cases would drop by 500, but if less than half the population stays at home, each 1 per cent decrease in that proportion will result in 100 new cases per day.”

– UNICEF and University of Indonesia findings on behaviour change and COVID-19 case numbers

Modernizing the digital workplace for major gains in efficiency

At ICTD, we are pitting bots against bureaucracy. UNICEF handles around a quarter of a million supplier invoices each year, all of which are processed by the Global Shared Services Centre (GSSC) in Budapest. This was a laborious manual process, which presented an opportunity for major efficiency gains. Working together, GSSC, ICTD, the Division of Financial and Administrative Management and the UNICEF Information Security Services Programme automated the processing of invoices using robotic process automation. The new software was launched at the GSSC in September 2021. It has delivered huge increases in efficiency and accuracy: the system processed almost 50,000 invoices between September and December 2021, saving the equivalent of roughly 1,180 hours of staff time for that period.
What is a bot?

A bot is simply a piece of code – a software program written to perform a specific task or set of tasks. Typically, bots follow a series of rules or sequential steps to reach an outcome, without requiring any input, and are used to perform repetitive tasks with speed and accuracy.

Figure 1: Savings made by the new UNICEF automated invoice processing system

The transformation and modernization of business processes continues to advance across all UNICEF business areas. In late 2020, UNICEF launched the Partner Reporting Portal, a web application to improve project reporting by civil society field partners. This real-time and searchable portal saw a steady uptake in 2021; approximately 29,000 documents were uploaded to the portal, delivering an estimated staff time saving of 14,500 hours. Another digital solution, using procurement cards that are fully integrated with banks for low-cost purchases, scaled up from 13 pilot offices in 2020 to 102 offices globally by the end of 2021, increasing efficiency by reducing processing time from days to hours, improving risk management and delivering cost savings to UNICEF offices.

It is important that the behaviour of our staff at ICTD is in line with UNICEF core values. To that end, in 2021, ICTD collaborated widely with colleagues across the organization to develop a user-friendly digital tool called Spectrum of Behaviours, to strengthen employees’ understanding of the spectrum of behaviours and the broad array of support resources and options for response. The digital tool mapped nearly 200 staff behaviours around UNICEF’s five core values and was successfully piloted among 847 participants in six offices.

Teleworking and other tools for online collaboration continued to play a significant role in UNICEF business processes in 2021. Across the organization, UNICEF established new ways of connecting staff and partners, streamlining remote work processes, and helping to accelerate the delivery of results for children. A selection of highlights is as follows.

- UNICEF rolled out a global prepaid procurement card, which automates the recording and reconciliation of transactions and integrates them with bank payment card technology platforms.
- Digital signatures enabled staff to advance life-saving work remotely through electronic documents, an advance that was rolled out in record time during lockdown.
- NetOne – the project to harmonize and modernize the UNICEF network infrastructure – and Cloud One – developing, hosting and integrating digital solutions across all UNICEF areas and partners – have together
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Ulan Mansurov, ICT Associate, UNICEF Kyrgyzstan

I’m the only ICT person in the office, so I get involved in everything. In 2021, I was mainly focused on promoting digital working by training people to use SharePoint and Teams. This was a critical part of strengthening the teleworking capacity of our office staff. As a result, all of our office files are now stored, shared and collaboratively used on the cloud. Staff no longer use attachments; they share links only, which was a major goal in the UNICEF digital transformation. I also created channels for different sections of the office with Planner in Microsoft Teams and other tools for effective project management and collaboration. My biggest achievement was achieving digital collaboration, so we now have an automated paperless approval process for terms of reference and notes for reference in SharePoint. Paperless approval is a powerful, time-saving and modern tool, which will improve office efficiency in daily business processes.

The new tool comes with a host of training materials and works both online and offline. It will be deployed globally in 2022.

Using AI to improve and streamline country office reporting

Together with the Division of Data Analytics, Planning and Monitoring, ICTD launched an AI-enabled application that scans end-of-year report summaries for potential risks, such as security or political risks, and assesses the report for compliance against global guidelines. This suite of tools, known as the Summary Narrative Quality Assurance Tools, can now be used to streamline and simplify the often laborious revision process of annual reports. The innovative algorithm behind it uses the human-in-the-loop technique to learn whether flags are valid and thus improves its accuracy with time. The integration with RAM assures maximum efficiency, so that draft summaries can be reviewed with a single click of a button, without any user training.

Digitizing field monitoring: The right data, in the right hands, at the right time

In 2021, ICTD partnered with the Division of Data, Analytics, Planning and Monitoring to pilot the new UNICEF Field Monitoring Module, a web application that provides the features required for country office field monitoring activities. It allows offices to simplify and standardize data collection for the purpose of field monitoring and will help offices to break down siloed data and unlock new insights.

Accelerated the delivery of cloud-based solutions so that all UNICEF staff can continue delivering results for children without having to be physically present.

- UNICEF launched the International Aid Transparency Initiative Portal, to improve the organization’s ability to deliver results transparently and accountably through a dedicated portal.
- The Global Directory, the UNICEF electronic business card system, added QR codes to digital business cards to improve efficiency and ease of use.

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Carlos Caballero, ICT Officer, UNICEF Latin America and the Caribbean

In 2021, I worked to improve remote connectivity, both in the region and globally. Specifically, we migrated a number of offices to the ‘Cloud One’ technology with excellent results, leaving only 25 per cent pending migration. The impact of this has been significant. The most notable improvements for UNICEF staff include being able to access information from anywhere, use corporate applications and collaborative sites and even print remotely.

ICT work is always a mix of planned components and responding to changes and evolving needs. This was particularly the case in 2021, when we experienced many changes as an organization and used technology to respond to them with the aim of supporting users and continuing to adapt to new ways of working, both personally and collaboratively.

The wider ICT community has always adopted a policy of supporting our users and providing solutions, regardless of the circumstances. Personally, I focus on results and providing support for my team as we guide users to work alongside us to achieve the necessary objectives.

Real-time inventory management

The Mobile Warehouse and Inventory Management Solution (mWIMS) app, launched in late 2018, has transformed warehouse transactions from paper to digital, resulting in faster delivery and improved management of supplies. The system – with its real-time data – has brought enormous benefits. It is currently used in 66 countries, helping to manage 85 warehouses. The savings it delivers are critical, especially in sudden-onset emergencies. By the end of 2021:

- Time spent on some warehouse management activities had fallen by as much as 67 per cent
- Staff could be assured of 100 per cent accurate inventories where the system was in use
- The dispatch time of vital supplies had fallen.

Frontier data for children

UNICEF is using frontier data such as big data, satellite imagery and real-time data to strengthen decision-making for children – and 2021 was a significant year for its frontier data strategy. MagicBox, the UNICEF collaborative data-sharing platform, has joined forces with the Division of Data, Analytics, Planning and Monitoring’s Data for Children Collaborative to create a new joint programme on frontier data. The first version of what will become the UNICEF Frontier Data Network, which already consists of a hub at UNICEF headquarters, a node in EAPRO and monthly open ‘show and tells’ on frontier data, was created in 2021.

This new effort has translated into a push to identify and solve the underlying biases and challenges of frontier data technologies for UNICEF work. In line with this, UNICEF
supported and co-authored one of the first studies into
the biases of big data on human mobility and its impact
on epidemic modelling; the study, ‘Biases in human
mobility data impact epidemic modeling’, was published
in December 2021. ICTD’s joint research with UNICEF
Colombia, ‘Trade-offs between individual and ensemble
forecasts of an emerging infectious disease’, was published
in Nature Communications in September 2021. Further
work on addressing the shortcomings of big data is being
conducted with the Public Health Emergencies team, the
World Health Organization and the Office of Innovation on
Frontier Data for Pandemic Preparedness, and within the
EAPRO frontier data network node.

ICTD has also made important progress in small area
estimation, producing reliable estimates on smaller
subpopulations. Working with the ISI Foundation, through
the Lagrange Scholarship, ICTD is developing tools to
understand how we can assess and apply newly available
AI-based poverty estimations, for example the Relative
Wealth Index developed by Meta. We are also developing
data science tools that will help on-the-ground responders
choose between the large number of high-resolution
population estimation maps available and select the most
appropriate one. We continue to work with the Data for
Children Collaborative on specific tools for population
estimation for vaccination; the first iteration of this
work, ‘Census-independent population estimation using
representation learning’, was accepted for publication in
the journal Scientific Reports. ICTD is also looking at the
inconsistencies of high-resolution settlement maps with
colleagues from the University of Copenhagen.

The climate crisis as a child rights crisis

Population estimations provide the foundations for much
of the UNICEF work around the world, and ICTD recently
collaborated with the Data for Children Collaborative to
launch the Children’s Climate Risk Index, which provides
the first comprehensive view of children’s exposure and
vulnerability to the impacts of climate change, ranking
countries according to children’s exposure to climate and
environmental shocks, as well as their vulnerability to the
shocks, based on access to essential services. The index is
designed to help prioritize action for those most at risk.

Too often, high-resolution estimations of child populations
and climate risks such as pollution are not available or
trustworthy in the places where they are most needed.
Together with data science volunteers from Carnegie
Mellon’s Solve programme, ICTD has started exploring
the potential and the pitfalls of using frontier data to tackle
the problem of air quality for children around the world. The
goal is to create a global air quality monitoring platform
to assess children’s exposure to air pollutants, in light of
fluctuations caused by COVID-19 lockdowns.

Partnering to help leverage transformative innovative technology

In 2021, ICTD worked with the Private Fundraising and
Partnerships Division to further develop the Supporter
Engagement Strategy (SES) and the configuration of a
new digital fundraising platform, the Latin America and
the Caribbean Regional Office (LACRO) SES Digital
Platform. The continuous improvements made to the SES
Digital Platform have supported fundraising efforts and
aligned them with the organization’s vision for resource
mobilization. The platform aims to bring supporters
and donors closer to each other, increasing supporter
retention and their conversion into donors, as well as
improving operational efficiency. In November 2021, the
LACRO SES Digital Platform replaced the legacy system
in Colombia and generated 11,000 new pledges in the
first four months. In India, country pledges increased by
more than 50 per cent in 2021, despite the pandemic.
The SES Digital Platform will be accessible by all country
offices and national committees and will allow UNICEF to
give individual supporters the best possible experience
while improving operational efficiency in a secure
environment. Specifically, ICTD contributed to the new
SES Digital Platform by integrating major touchpoints – a
payment gateway, donation portal, SES Digital Platform
and reporting platform – to enable enhanced fundraising,
increase operational efficiency and improve security to
meet payment card industry and data protection standards.
Part 4
Looking ahead
As UNICEF sets out at the start of its next strategic plan, ICTD will continue to focus on achieving organization-wide digital transformation. This means continuing to harness digital tools to improve UNICEF programmes, streamline operations and processes, and enhance outreach, including through digital influence, engaging beneficiaries and stakeholders, and fundraising.

At the heart of this digital transformation is the OneDigital initiative, developed by ICTD, which UNICEF adopted in 2020 to guide it through the years to come. The initiative, which is now fully endorsed, will ensure that all UNICEF offices adhere to the same standards and that there is centralized accountability while delivering the benefits of enhanced cooperation, coordination and resource sharing. The OneDigital initiative will:

- Strengthen information and cyber security
- Centralize UNICEF global information systems, digital solutions and platforms to improve digital governance and accountability
- Improve financial planning, accountability and financing for digital products
- Lay the groundwork for a global, real-time data strategy.

In tandem with this, ICTD will continue to strengthen and enhance the UNICEF digital technology investment portfolio, aligning it with the UNICEF strategy and the organization-wide digital transformation.

The UNICEF Strategic Plan, 2022–2025 identifies nine change strategies that are key to accelerating progress towards the Sustainable Development Goals and realizing children’s rights. Among them is change strategy number four: digital transformation. Through this strategy, UNICEF imagines a world in which a child’s survival, growth, development and well-being are improved by digitally enabled food and health systems, and where digital technologies and innovations can solve the child health, nutrition and development challenges of our time.

To achieve this, UNICEF will:

- Use digital applications to provide information and advice on maternal and child health, nutrition and child development, and well-being

Responding to lessons learned during the COVID-19 pandemic, and building on the success of Learning Passport, ICTD will continue to realize the potential of digital solutions to expand access to quality education, and to make education systems more resilient in the face of crises. The urgent need for widespread remote learning during the pandemic response created an opportunity to reimagine education, but it also threatened to deepen the existing digital divide – including for girls and women, and children with disabilities. ICTD will work to deliver digital solutions that are truly inclusive and do not exacerbate existing inequities.

ICTD Digital Core’s transition to Valencia, Spain is expected to progress as planned, on schedule and within budget. Once the exercise is complete, in September 2022, ICTD
in Valencia will be home to around 60 international staff relocated from New York and 30 newly recruited members. ICTD will work to create a high level of cohesion between its people, processes and technologies, building on its solid foundations as an organization and its proximity to the United Nations Global Service Centre (UNGSC), with all of the resources and support that that entails. It is hoped that the close working relationship between UNICEF and UNGSC will enhance efficiency and cost-effectiveness, freeing up ICTD staff to focus on generating transformative results for children worldwide. Two new UNICEF data centres and related global infrastructure in Valencia and Brindisi are currently under construction. They aim to further modernize operational efficiency and effectiveness, strengthen global cloud infrastructure and video conferencing for remote work and business continuity, and advance UNICEF information security.

In 2022, ICTD will remain at the leading edge of research and emerging trends, to capitalize on new advances and improve UNICEF resilience in the face of challenges, including potential political or security risks. To ensure technology compatibility and facilitate integration, ICTD will seek to involve itself at the outset in developing and defining new projects. To safeguard against threats and risks, ICTD will continue to emphasize the importance of building security into every product during the design phase.