



2019 ANNUAL REPORT INFORMATION AND COMMUNICATION TECHNOLOGY DIVISION

PART 1 INTRODUCTION

UNICEF's future is digital. Realizing that future means elevating the Information and Communication Division (ICTD) to become a full partner in accelerating UNICEF's digital transformation to ensure the delivery of innovative technology services across the organization.

The Strategic Plan, 2018–2021 places special emphasis on how technology can lead to improvements in service delivery and be used to serve the most marginalized and hard-to-reach children. In this spirit, the UNICEF ICTD Strategy relies on building solid partnerships and leveraging technical expertise to support the scale up of digital interventions.

As part of the global evaluation of innovation in UNICEF, in 2019, ICTD was recognized for its leadership role in enabling digital innovation. The evaluation recommended that leadership for digital innovation be housed within ICTD, while bringing together the various parts of UNICEF headquarters that are currently working in this area.

The development of the new Field Results and Innovation Cone allows us to do just that. We are now working in closer partnership with colleagues from across the organization – in the Supply Division, the Office of Innovation, the Office of Research and the Office of Global Insight and Policy – to increase core business efficiencies and programme effectiveness and work towards a shared vision. We are also growing a strong culture of digital portfolio management that is allowing us to realign existing digital innovation and talent under a single “digital umbrella”. The results include more streamlined work processes, and more effective programmes.

Driving these efforts is our focus on people, process, partnerships and technology: providing robust and evolving technology platforms and infrastructure with a focus on

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Schoolchildren at Binga
Primary school take time to
familiarise themselves with
computers at the school.

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innovative and scalable digital solutions that are closer to our beneficiaries and stakeholders; delivering rapid, nimble and transparent processes to operate, measure and continuously improve our service delivery for children; strengthening and expanding trusted partnerships with key stakeholders; and continuing to recognize that our most valued asset is our people.

This report tells the story of how we translated these priorities into a new way of working in 2019 – a way of working that allowed our staff to contribute to powerful results for children, across the world.

PART 2

CONTEXT AND TRENDS

Over the past two decades, the advent of digital information and communication technologies (ICTs) has expanded and spread rapidly. Today, these technologies play a critical role in how global communities, governments and international organizations like UNICEF function, by offering new and faster ways of analysing insights into the needs of vulnerable populations and where best to invest scarce resources in human development and humanitarian response.

This digital transformation is driving organizations like UNICEF to reinvent their business models to offer innovative services. Three formative forces have proven essential in the pursuit of digital transformation: modernizing core systems to serve as a foundation for innovation and growth; elevating the cyber and the broader risk domains from compliance-based activities to a strategic function; and adopting new technology functions to deliver against the promise of existing and emerging capabilities.

For UNICEF, technology presents an opportunity to expedite and magnify the impact of development and humanitarian relief efforts through greater efficiency and responsiveness. To harness this potential, the organization must continue to invest in the growth and enhancement of its technological capabilities.

The Executive Director has called on divisions across the organization to identify and commit to key measurable deliverables that will accelerate progress towards results for children. To this end, UNICEF is delivering change by combining high-quality programmes at scale, harnessing innovation and collecting evidence, and fostering innovation in programming and advocacy for children. The UNICEF Information and Communication Technology Division (ICTD) Strategy was developed to directly support those goals, while facilitating the partnerships that will enable this work.



What five-years old can do with computers? Kindergarten literacy and math lesson. The photo was made during the field visit to Vitebsk oblast to document the best practices of pre-school education in Belarus.

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PART 3

KEY RESULTS IN 2019

The ICTD strategy aims to strengthen the organization's application of information and technology solutions and approaches across three key pillars of work: 1) increasing UNICEF's operational efficiency and effectiveness; 2) enhancing its programme effectiveness; and 3) strengthening its innovative use of technology and partnerships. The work achieved under these pillars in 2019 is described in depth in this section.

PILLAR 1: STRENGTHENING OPERATIONAL EFFICIENCY AND EFFECTIVENESS

Under Pillar 1, ICTD develops and enables information technology solutions and approaches that support UNICEF offices and staff to be fit for purpose. This involves a continuous effort to use ICT to increase the organization's productivity by simplifying business processes, improving user experience, empowering users, enhancing user productivity and extending access to information.

MODERNIZING THE WORK ENVIRONMENT

Enterprise Content Management

The ICTD-led Enterprise Content Management (ECM) project was established to make improvements around how UNICEF staff create, share and find information, collaborate with each other and access the tools needed to get work done. The changes made through the ECM project have paved the way for a digital transformation in UNICEF, making our organization fit for purpose to deliver results for children, now and into the future.

In Jordan, two adolescent girls use a cellphone outside a solar kiosk in the Za'atari camp for Syrian refugees, in Mafraq Governorate, near the Syrian border.

© UNICEF/UNI322847/HERWIG



As a field focused organization with more than 370 offices globally, UNICEF staff are now enabled to work more effectively and efficiently across time zones, which has made the organization more effective in its work for children.

THE ECM PROJECT HAS DELIVERED:

- ➔ A **digital workplace** providing a mobile and modern new intranet portal that simplifies navigation and easy access to Office 365 tools, enhancing collaboration and productivity and strengthening communication across UNICEF.
- ➔ A **document management system** enabling staff to create, store, collaborate on and share documents in a cloud-based, mobile-friendly environment, removing dependence on individual computers and shared drives, and allowing staff to better manage and protect UNICEF's information – a key aspect of operational effectiveness.
- ➔ An **information governance framework** ensuring that UNICEF's information is managed in an effective and consistent way across the organization. Through this work, the ECM team established directions on information management topics of global need, including digitization, taxonomy, naming conventions and retention.
- ➔ UNICEF's first formal **Archives** for the preservation of historical materials that require permanent retention and protection – from Audrey Hepburn's *laissez-passer* to the letters of the first UNICEF Executive Director.

2019 ECM Achievements:



500,000+
FILES ADDED IN THE LAST
SIX MONTHS OF 2019



1,157 ACTIVE
NEW SITES
ADDED, INCLUDING **415**
IN THE FIELD IN 2019



1,200+ OFFICE-
BY-OFFICE
TRAININGS AND PLANNING
SESSIONS IN 2019



18 REGULATORY
DOCUMENTS
APPROVED,
INCLUDING GLOBAL
RETENTION SCHEDULES

Improvements to UNICEF's ICT Infrastructure – Cloud Based Computing, Hosting of Systems and Video Conferencing (CloudOne and LinkUp)

In recent years, UNICEF has recognized an unprecedented demand for more mobility and the flexibility to work from anywhere. A significant portion of this demand is driven by the use of modern, cloud-based services that range from basic application hosting to large-scale data analytics.

As part of UNICEF's transformation to a digitally enabled organization, in 2019, ICTD launched the CloudOne, NetOne and LinkUp projects which aim to transform how UNICEF and IT works. By moving information and data to the Azure infrastructure, CloudOne liberates staff from being physically limited to a UNICEF office; NetOne brings about previously unavailable visibility, manageability and seamlessness to UNICEF corporate networks, and LinkUP delivers organization-wide next generation conferencing capability.

CloudOne and NetOne

CloudOne is delivering the next generation of tools, platforms and services that will enable UNICEF to develop, host and integrate digital solutions across all UNICEF areas and partners. The project also developed the LIGHT model in UNICEF to support more, if not all field offices, providing a comprehensive roadmap for a "Cloud only UNICEF" beyond 2021. Together, these set of technologies provide modern and seamless user experiences across apps, devices and locations.

In 2019, as a first step towards the organization-wide implementation of CloudOne, UNICEF tested the project in the East Asia and the Pacific Regional Office, as well as country offices in the Europe and Central Asia region. The pilot demonstrated that field offices can operate without local file services, creating a scenario where UNICEF staff and consultants can work from wherever there is Internet connectivity. The implications are significant for offices that work in emergency environments (can be any office, HQ, RO or CO), providing robust business continuity capabilities in case the office is evacuated or staff are required to work remotely, for whatever reason. The concept has been rolled out in over 30 country offices in Europe and Central Asia and the Middle East and North Africa and will continue to be deployed in UNICEF country offices all around the world throughout 2020.

Additionally, CloudOne was used to deploy 36 new workloads (data, services and applications) to the UNICEF cloud as part of both HQ and Field initiatives. These workloads included global custom applications, websites and data science collaboration spaces with external partners. These CloudOne platforms and common services helped these projects to shorten their development cycles and decrease their financial costs and risks by reusing common shared services, predefined templates and automation technologies.

The NetOne project comprehensively and holistically resolves the internal and external network challenges while creating opportunities for new services and capabilities. It aims at harmonizing and modernizing UNICEF's network infrastructure bringing visibility, manageability and seamlessness to our corporate networks while simultaneously increasing their security.

Through the implementation of both CloudOne and NetOne projects, offices will see a reduction in IT operational overhead as the costs and activities relating to local data

THE LINKUP PROJECT PROVIDED UPDATED MEETING ROOM STANDARDS FOR ALL UNICEF OFFICES TO ENSURE THAT ALL PERSONNEL CAN USE THESE NEW AND IMPROVED TOOLS EFFECTIVELY.

centers (e.g. server hardware, licenses, maintenance and local support contracts) will no longer apply or be significantly reduced. With these projects, IT staff, in such offices that adopt CloudOne and NetOne, will have the opportunity to grow their skills to more value-added IT services such as business analysis, T4D support to programmatic activities, support to information management, the management of cloud-based workloads, and managing network applications performance while catering for duty of care scenarios.

LinkUp

The LinkUp Project globally modernized UNICEF's virtual conferencing capabilities and provided an updated communication platform with new and improved virtual conferencing tools to help staff better communicate, share and collaborate easily and reliably.

Through the LinkUp Project UNICEF personnel now have the option to choose between two video conferencing tools, Skype for Business and Zoom, allowing both UNICEF colleagues and external partners to connect anywhere and on any device. These tools both combine video conferencing, online meetings, chat and mobile collaboration and were selected for their simplicity, reliability and consistency across all devices for a seamless user experience. Additionally, the LinkUp Project provided updated meeting room standards for all UNICEF offices to ensure that all personnel can use these new and improved tools effectively.

Service Gateway

In the digital age, automation not only expedites business processes, it also facilitates accuracy and uniformity. In 2019, ICTD, in partnership with the Global Shared Services Center, simplified and modernized UNICEF business processes by replacing its MyCase and IT Service Manager platforms with Service Gateway, which is – based on Service Now technology – a more intuitive and user-friendly case management tool. The new tool is designed to speed up the submission of cases, offer greater system stability and improve integration with other systems – reducing errors and case returns, while also enabling tracking and adherence of service level agreements.

All staff can access Service Gateway and submit various types of requests, including those pertaining to human resources and payroll issues, finance and master data management and information technology. The enhanced systems provided through Service Gateway allow users to search the knowledge base, use live chat, send status notifications to other users, use their mobile devices to access the system, and enjoy an enhanced user-centred platform.

Early feedback indicates that Service Gateway has improved work efficiencies and data accuracy in service requests, reporting and knowledge management. The Global Shared Service Centre estimates that the system has resulted in valuable time savings for country offices equivalent to the work hours of 52 full-time employees.

VISION Enterprise Resource Planning modernization and VISION Fiori application

In 2019, UNICEF continued to realize and sustain the benefits of its VISION Enterprise Resource Planning Modernization Programme – an application system that manages and automates organization-wide business processes, including planning, budgeting, finance, human resources, supply and logistics. During the year, ICTD implemented hundreds of system enhancements that contributed to the simplification of business processes and supported evolving business needs across all areas. The significantly enhanced system performance speed, which is on average 10 times faster than in pre-modernization status, significantly improved work productivity and introduced staff time savings. An example being, year-end financial closure VISION processing time was reduced from 30 hours to 2 hours in 2019.

In another effort to enhance staff productivity and well-being, in 2019, ICTD rolled out the VISION Fiori apps to all UNICEF staff globally. Fiori is an application available via desktop or mobile phone that simplifies retrieving and updating information in VISION at any time in any place. Fiori has increased the ease with which staff are able to apply for and gain approval for leave and attendance requests as well as leverage flexible working arrangements while facilitating data collection for measuring progress towards organizational cultural changes.

Global directory

At an organization as expansive as UNICEF, finding accurate information about staff, offices and facilities is essential to a functional workspace. Until recently, much of this data was siloed in distinct directories, making it difficult for UNICEF staff to locate information on people, offices and facilities.

The new UNICEF Global Directory, launched in November 2019, was designed to change that. Developed by ICTD in collaboration with the Global Shared Services Division and in consultation with the Division of Human Resources, the Global Directory is a user-friendly and easily updatable tool that allows staff, non-staff and National Committee colleagues to search for people, office and facility information across the organization. The new directory centralizes this information in one accessible tool, thereby replacing several decentralized staff directories, including the Field Office Telephone Directory, Supply Division Directory and the New York Directory.

In the first two months of implementation, the Global Directory attracted 18,000 page views and 6,000 searches. Additionally, some 1,500 users updated their contact information through the system.

eTools

In 2019, ICTD continued to support the global roll out of the eTools application – an online platform that strengthens UNICEF country programme management for results. eTools simplifies Country Office processes related to implementing partnership management and programme monitoring to help UNICEF staff focus on achieving results in all programme contexts. Its dashboards bring together cross-cutting data from programmes into a set of analytical tools to help staff make better programme management decisions, improve transparency and operational learning, and reduce reliance on shared drives. It has in addition facilitated the streamlining and harmonising of the management of execution of Programmes across the organisational landscape.

By the end of 2019, 76 UNICEF country offices had adopted eTools with ICTD support, representing 95 per cent of total country programme budgets. ICTD continued to facilitate the uptake of eTools through trainings, with the establishment of an eTools support capability within the Global Shared Services Centre. New eTools products were launched, including the Field Monitoring and Prevention of Sexual Exploitation and Abuse module. Additionally, ICTD disseminated lessons learned and best practices to sister United Nations organizations (i.e., UNFPA and UNHCR) – positioning UNICEF as a leader in innovative partner management.

Accessibility of information technology systems

UNICEF is dedicated to becoming a more inclusive organization for all. In 2019, ICTD worked with other headquarters divisions to perform an organization-wide accessibility audit of critical global information technology systems. The audit considered how people with different abilities were able to use UNICEF's systems. The exercise identified gaps and provided recommendations on how to address these gaps and make UNICEF and its information technology more inclusive and accessible – not only for staff but for the beneficiaries we serve. The UNICEF Executive Director has articulated a firm commitment to acting on these recommendations and strengthening the accessibility of the organization's internal systems.

ENHANCING WAREHOUSE AND INVENTORY MANAGEMENT

UNICEF operates more than 200 warehouses in 135 countries. The Mobile Warehouse and Inventory Management System (mWIMS) is part of a global warehouse strategy initiative aimed at creating warehouse and inventory management excellence in all UNICEF warehouses worldwide.



Milica 6 years old, and Petar 4 years old, are photographed in front of a laptop, in the city of Podgorica, Montenegro, as part of the promotion of the “End Violence Online” campaign.

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The mWIMS application revolutionizes the way that the warehouse managers oversee stock. The entire warehouse management system is now in the pocket of the warehouse floor worker, allowing for synchronization of the movement of goods in and out of the warehouse with the flow of data in the system. This leads to fewer errors, more efficiency and no backlogs in data entry. mWIMS also makes vital and accurate information available at a moment's notice. In cases of a sudden onset emergency, UNICEF staff have a clear view of what emergency supplies are available in the warehouse and what additional supplies must be ordered, so that life-saving supplies can be delivered seamlessly without delays.

In 2019, ICTD supported the deployment of mWIMS in 56 warehouses in 23 countries. As an example, following the landfall of Cyclone Idai in Mozambique, UNICEF used mWIMS and worked with partners to distribute basic family hygiene kits (containing toothpaste, toothbrushes and soap for a family of five), female hygiene kits (containing clothes, underwear and sanitary products) and buckets, to 202 families living in a temporary accommodation centre in Pemba through mWIMS. This was the first line of defence against cholera and other diseases.

STRENGTHENING INFORMATION SECURITY AND RISK MANAGEMENT

Information security

Cyberattacks continue to plague the world, affecting both the public and private sectors. As security breaches persist and cybercrime becomes ever more lucrative, security awareness is growing globally, and investments are increasing in security technologies.

UNICEF is committed to protecting organizational information that may critically impact its mission and mandate and/or the private information of children, women, staff and their families. ICTD works through both internal and external channels to mitigate information security and privacy risks associated with internal systems, and those systems that support child/beneficiary information.

In 2019, ICTD strengthened UNICEF's information security infrastructure, and reaffirmed its commitment to and recognition of its importance, with the development of a five-year programme covering all elements of a modern approach to information security. Included was the establishment of the Cybersecurity Operations Centre in Budapest to identify, isolate and respond to cybersecurity incidents affecting the organization. The Centre raises the bar on information, application and infrastructure security management by centralizing corporate vulnerability management, threat monitoring and end-point security, and coordinating information technology security incident response and remediation actions. Since its establishment in 2019, the Centre has tackled more than 10 serious information security situations.

Risk management

In a changing world, an effective risk management framework that identifies and mitigates risk, while enabling the organization to deliver results, is critical. Robust ICT systems that support a mobile and versatile workforce and flexibility in business operations are essential to keeping pace with the risks and opportunities posed by rapidly evolving technology.

ICTD therefore manages emerging risks to UNICEF's programmes and operations by a) looking into risks that affect or are inherent in UNICEF's business strategy; b) identifying and mitigating risks through internal risk assessment, audits and other processes; and c) maintaining regulatory documents that address potential risks. In 2019, specific activities included conducting the annual ICTD risk assessment; revising the ICT risk taxonomy; enhancing the ICT operational risk register; and aligning the ICT risk management programme with the new eGRC (electronic Governance Risk and Compliance) framework. ICTD also developed and published 16 new regulatory documents and coordinated several audits conducted by internal and external auditors.

THE ROLE PLAYED BY THE REGIONAL TECHNOLOGY-FOR-DEVELOPMENT SPECIALISTS IS, IN GENERAL, WIDELY RECOGNIZED AND APPRECIATED AND SHOULD SERVE AS A MODEL. – 2019 GLOBAL EVALUATION OF INNOVATION IN UNICEF

PILLAR 2: GROWING PROGRAMME EFFECTIVENESS

As outlined in its Strategy, ICTD's work is fundamental to UNICEF's programme effectiveness, as well as its systems strengthening work and the delivery of digital public goods. Under Pillar 2, ICTD works to scale and replicate UNICEF's flagship innovative solutions for programme delivery, real-time monitoring and citizen engagement. The below initiatives summarize the work achieved under this Pillar in 2019.

TECHNOLOGY FOR DEVELOPMENT

Technology for development (T4D) and digital innovation – exploring new ways of delivering programmes with new partners and technologies – is increasingly recognized as crucial to realizing the promise of the 2030 Agenda for Sustainable Development.

Within the Innovation for Results cone, the T4D function is embedded in ICTD alongside the Office of Innovation, the Supply Division and the Office of Global Insight and Policy and the Office of Research. T4D provides advisory, implementation and quality assurance services to programmes on technology and digital innovation in UNICEF, and leadership on digital innovation.

More than 50 million people were reached in 2019 through ICTD-supported digital health, education, social protection and water and sanitation initiatives across regions.

Strengthening national systems using real-time technology

In 2019, 85 UNICEF country offices reported using a real time information technology at scale. Strengthening national systems with the support of real-time monitoring approaches and technologies has been the focus of a two-year, 12-country interdivisional and inter-regional initiative supported by ICTD/T4D, Programme Division, the Division of Analysis Planning and Monitoring and the Office of Innovation, with its secretariat embedded in ICTD. The effort is driven by demand from countries and regions to use mobile technology in programming, and uses the open-source real-time information platform, RapidPro, to help national governments track, course correct, deliver and accelerate results for children in line with national priorities and the UNICEF Strategic Plan. The initiative:

- Provides interdisciplinary technical support and quality assurance to countries as they design and implement programmes;

- Captures rapid lessons to support the efficient and effective scale up of innovative digital technology;
- Supports the identification of pathways to scaling and mainstreaming digital innovations in national programmes.

Through the 12 country initiative, more than 40 million children were reached with real-time monitoring supported programming during 2018. According to the 2019 global evaluation of innovation in UNICEF, the initiative has demonstrated an important new way that UNICEF divisions, and regional offices can collaborate across sectors and encourage the scale of digital innovation approaches and tools to address critical programming bottlenecks.

Delivering results for children across sectors in 2019

In the first two years of the Strategic Plan and since deploying seven T4D officers at the regional level,¹ ICTD has had a powerful impact on scaling digital innovation and accelerating results for children across the organization.

In 2019, ICTD/T4D supported countries to ensure that every child survives and thrives. That included bringing together multi-sectoral teams to use technology, digital innovation and human-centred design to strengthen health systems and the health system enabling environment. For example, in Myanmar, UNICEF worked with the Ministry of Health and Sports and WHO to use a mobile application – KoboCollect – to monitor a supplementary polio immunization campaign. Using the app, field data was instantly received, made available, compiled and viewed at the central level, revealing areas with unvaccinated children to facilitate rapid programme adjustments. Ultimately, 90 per cent of children under 5 in targeted areas were vaccinated through the campaign.

Recognizing the acute need for innovation in education, ICTD/T4D also used technology to strengthen education systems and improve learning outcomes. In Uganda, UNICEF partnered with the Government to roll out *Kolibri*, an open-source digital education platform that provides free learning content to students and educational resources to teachers. With *Kolibri*, users can access content on a range of subjects through text, video, interactive simulations and games, as well as tools designed to meet the unique needs of children with disabilities. Both educators and students report feeling more engaged and inspired in the learning experience with *Kolibri*.

Technology and digital innovation have a key role to play in strengthening child protection information management systems – including civil registration and vital statistics.

¹ These officers were first deployed in October 2017.

ABOUT T4D: 2018–2019

- ➔ **The T4D function was established in 2017** to provide technical assistance and quality assurance services to digital innovation and technology initiatives in the field. The T4D function works in close collaboration with national partners, across UNICEF headquarters divisions and with regional and country offices, to deliver results for children in line with the UNICEF Strategic Plan 2018–2021.
- ➔ To date, more than **1,300 T4D and innovation initiatives** have been catalogued through the global Technology for Development and Innovations inventory – which provides a view of the universe of T4D-supported initiatives by Strategic Plan Goal Area and stage of scale. The inventory is also linked to and supporting enhanced governance around T4D and innovation initiatives across country offices, to ensure that ICT-enabled work in support of programmes is aligned with national programme priorities and strategies and emphasizes support to strengthening national systems, and use of Digital Public Goods, in close collaboration with programme teams and national partners.
- ➔ UNICEF has begun **transforming the ICT workforce** from a traditional back-office function to a T4D and digital programming function. Each UNICEF regional office has supported related trainings and capacity development initiatives for ICT, programme and management staff. Face-to-Face T4D training for ICT, programme and planning staff was piloted for staff in South Asia and East Asia and the Pacific, and T4D training modules were subsequently delivered to other regions in 2019.
- ➔ The **launch of key knowledge management channels and processes** – including the T4D intranet website, T4D peer-to-peer support resources, regional T4D networks, a T4D webinar series for internal and external audiences, programme guidance and research – has vastly improved UNICEF's T4D and digital innovation knowledge base.

In Indonesia, ICTD/T4D worked with the Ministry of Social Affairs to increase the coordination and quality of child welfare information in one of the largest implementations of *Primero*, a digital public good and a web-based platform developed to enhance how humanitarian and development professionals monitor incidents against children and manage cases. By the end of 2019, ICTD had helped programme colleagues deploy *Primero* in 26 countries globally.

ICTD/T4D also continue to pioneer T4D and digital innovation in the WASH sector and use UNICEF's vast field presence and global reach to support the scale of digital programming

and strengthen national systems using technology. For example, in India, ICTD/T4D partnered with the Government to strengthen national capacity to monitor the delivery of WASH services using RapidPro. The evidence gathered is being used to improve social accountability, inform the design of future initiatives and scale up WASH innovations across the country. To date, the initiative has directly benefited nearly 146,000 adults and over 97,000 children, and indirectly benefited the 5.9 million people residing in the four pilot districts.

The employment of ICTs is also integral to UNICEF's effort to provide every child with an equitable chance in life. In Yemen, that includes supporting the unconditional emergency cash transfer project, which is serving about one third of the country's population. Given the complexity of the operation, UNICEF is using Yumnn, an information management system built to contain and secure the data of the project's 9 million beneficiaries. Since adopting Yumnn, UNICEF Yemen has integrated several technology solutions – from real-time monitoring tools to a mobile application for grievance collection in offline areas – to enhance Yumnn's capacities for reporting, management and risk mitigation.

STRENGTHENING HUMANITARIAN PREPAREDNESS AND RESPONSE

In 2019, global humanitarian needs grew to their highest levels yet. By the end of the year, more than 1 in every 45 people in the world – nearly 167 million people – required urgent humanitarian assistance.² Over the past five years, the number of people in need of humanitarian assistance has more than doubled.³ In response, in 2019, ICTD supported UNICEF's humanitarian response in 61 countries, including in 9 countries affected by Level 2 or Level 3 emergencies.

Emergency Preparedness

In 2019, ICTD continued to support the development of and improvements to the Emergency Preparedness Platform – a tool designed to improve UNICEF's preparedness globally. The Platform helps country offices analyse risks, develop high quality preparedness, response and contingency plans, and get ready to respond on time to emergencies as they happen or deteriorate.

Based on lessons learned during the 2018 roll out of the Emergency Preparedness Platform, in 2019, ICTD established a robust product team, set up controls and processes and secured funding to support the development of future versions of the Platform. The aim is to introduce new efficiencies in the platform that will allow

² Office for the Coordination of Humanitarian Affairs, *Global Humanitarian Overview 2020*, OCHA, Geneva, 2019, p. 24.

³ In 2014, nearly 78 million people were in need of humanitarian assistance. Office for the Coordination of Humanitarian Affairs, *Global Humanitarian Overview 2015*, OCHA, Geneva, 2014.

**BASED ON LESSONS
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UNICEF to generate better quality preparedness plans by enabling inputs from field offices and delegating preparedness plans to specialists.

UNICEF also took steps to build the ICT capacities of staff and partners for preparedness, response and recovery. Fifty-five participants from all UNICEF regions and key partner organizations – including the United Nations High Commissioner for Refugees (UNHCR), the United Nations Department for Safety and Security (UNDSS), the World Food Programme (WFP) and Save the Children – were trained at the Global Emergency Telecoms Training event, which featured sessions led by private sector partners such as CODAN, IEC-Telecom, Danimex and Cisco Systems. The participants graduated as certified emergency telecommunications responders with specific skills in emergency telecommunications

procedures and systems. They also gained expertise on new and innovative rapid deployment solutions, such as renewable power alternatives, new emergency telecommunications kits and mobile satellites – tools designed to advance responders' communications capabilities during acute crisis.

Emergency response

In 2019, ICTD provided direct support for emergency preparedness and response in 18 crisis-affected countries. For example, in the Bolivarian Republic of Venezuela and Syria, UNICEF worked with Luxemburg Government partner emergency.LU – a mobile, satellite-based telecommunications platform – to provide vital ICT equipment that helped the office stay connected during the crisis. All 18 countries also benefited from the deployment of more than 80 emergency ICT kits – self-contained toolkits comprising the necessary hardware to rapidly deploy core UNICEF ICT services – which facilitated immediate access to data and information that supported life-saving decision-making.

In Malawi, ICTD partnered with Amazon to deploy the Amazon Snowball Edge solution – a mobile supercomputer – to support the use of drones to access hard-to-reach places in emergencies. UNICEF Malawi will use the device to process large volumes of drone imagery, store the imagery, and share the processed files on the cloud. In 2019, the Amazon team trained UNICEF Malawi staff on how to use the Snowball Edge to process drone imagery. Ultimately, this work will support UNICEF's efforts on flood modelling and mapping mosquito breeding sites.

Working with the United Nations Technology Advisory Group and the United Nations Emergency Telecoms Cluster, ICTD also supported the launch of the Telecoms Security Standards, an inter-agency project that aims to standardize security communications systems supporting the safety and security of humanitarian staff. The launch involved more than 48 telecommunications assessment missions, more than 20 onsite support missions and 28 remote support activities in emergency locations.

ENHANCING CHILD PROTECTION DATA MANAGEMENT

As the world's leading child rights organization, UNICEF is mandated to respond to the needs of children in emergency situations and development contexts, and to ensure their protection and future well-being.

As detailed in its Core Commitments for Children in Humanitarian Action (CCCs), UNICEF Child Protection implements a wide range of emergency programme actions – both preparedness and response – that depend on the timely and accurate collection of data and its secure and efficient management, storage and use. Child protection interventions such as the prevention of gender-based violence, family tracing and reunification and monitoring and reporting on grave violations against children in situations of armed conflict require sophisticated information management systems to organize data and inform programming.

In response to these requirements and commitments, UNICEF worked with partners to create Primero – an open-source software platform for managing humanitarian protection-related data. Primero facilitates case management in the area of incident monitoring, gender-based violence and family tracing and reunification. Primero offers a secure, user-friendly alternative to paper- and Excel-based beneficiary data management. The first version of Primero was installed in Sierra Leone in 2015 and turned out to be a transformative tool for child protection workers who were able to use the platform to deliver and track their services more efficiently and securely.

In 2019, UNICEF started the Primero X project with the help of Microsoft. The project is meant to transform Primero into a Software As A Service (SaaS) in order to deliver new important case management features, streamline deployments and reduce Primero's running costs. To support the launch, ICTD contributed to the design of the new concept architecture, helped to secure funding, worked with teams to maintain the project timeline and resources as well as facilitated managing relationships with vendors, internal partners and the project team.

Partners have already expressed a great deal of interest in the new platform. Early feedback indicates that Primero X is on par with the highest industry standards, introduces innovative new concepts and has the potential to support additional resource mobilization for child protection information management.

INCREASING ACCESS TO LEARNING FOR CHILDREN WITH DISABILITIES

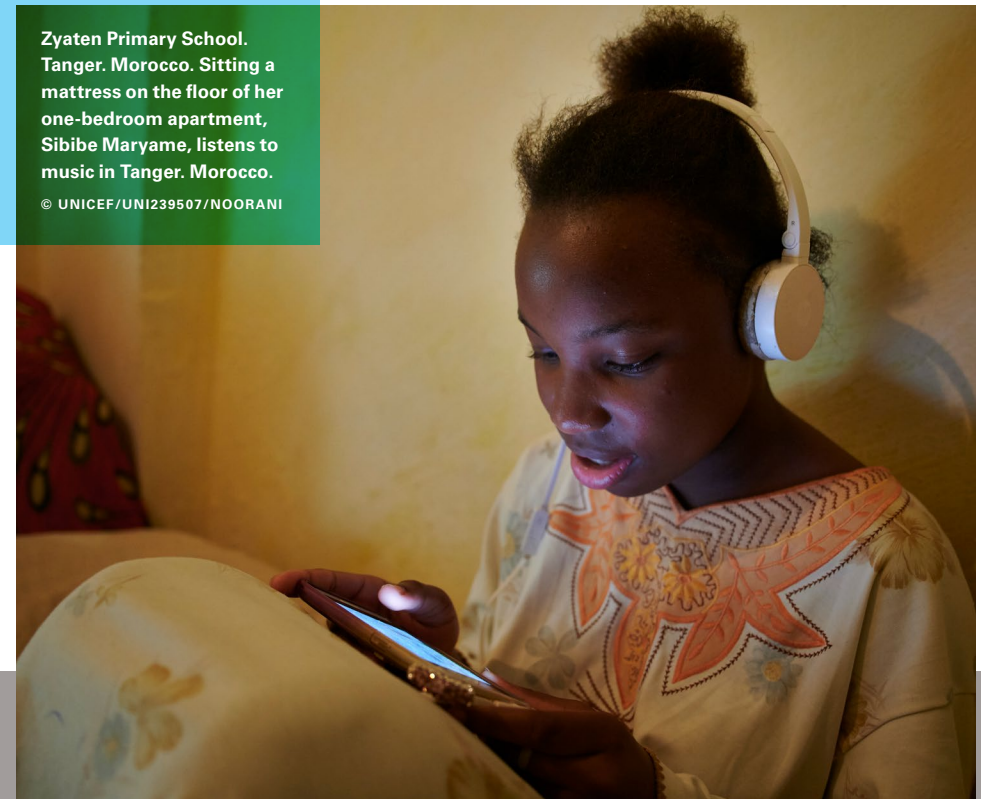
Globally, children with disabilities are one of the most marginalized and excluded groups, and for these children, gaining access to quality education can be challenging. By adding specific features and following universal design for learning principles, textbooks can be made accessible for students who are visually impaired, hard of hearing, and have intellectual, developmental or learning disabilities.

UNICEF and partners are therefore driving an innovative solution called Accessible Digital Textbooks for All, to improve access to education by making textbooks available, affordable and accessible for children with disabilities in all contexts. The initiative brings writers, publishers, teachers, organizations of persons with disabilities, technologists and ministry of education representatives together to develop the guidelines needed to produce textbooks in accessible digital formats. Participants have jointly set standards for features such as narration, sign language, interactivity and the audio description of images.

In 2019, ICTD identified the information technology solution that the digital textbook is based on. The solution uses frontier technology that allows – for the first time –

**Zyaten Primary School.
Tanger, Morocco. Sitting a
mattress on the floor of her
one-bedroom apartment,
Sibibe Maryame, listens to
music in Tanger, Morocco.**

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THE TECHNOLOGY ALLOWS FOR CHILDREN TO VIEW SIGN LANGUAGE AND TEXT SIMULTANEOUSLY, HIGHLIGHT WORDS AND USE DIFFERENT FONTS, AND ACCESS AN AUDIO COMPONENT – ALL IN ONE PLATFORM.

the generation of textbooks in a digital format that is fully accessible to children with different abilities. The technology allows for children to view sign language and text simultaneously, highlight words and use different fonts, and access an audio component – all in one platform. ICTD also helped define the needs and text requirements, built the books using the best design approaches, identified potential technology partners (e.g., Microsoft and Google), and created a road map for scaling the solution. In 2019, the textbooks were piloted in six countries in Africa and Latin America, with successful results, and additional schools from across the globe have requested the technology.

STREAMLINING PARTNERSHIPS FOR CHILDREN

Cooperation between United Nations agencies and various civil society organizations is critical to the delivery of all organizational mandates. For UNICEF, partnerships support a variety of programmes, such as education and psychosocial support for migrant children at reception centres, the distribution of health and nutritional supplies and education campaigns targeting judges working with adolescents in the criminal justice system.

Given the magnitude of civil society organization contributions, it is critical that UNICEF has consistent access to the best possible partners with the right expertise. Traditionally, the process of securing partnerships has been paper-based and bureaucratically onerous, making it challenging to solidify relationships with key stakeholders in a timely and well-coordinated manner. During emergencies, cooperation between UNICEF and civil society organizations is even more important and time sensitive.

To foster stronger partnership connections, in 2018, UNICEF, in collaboration with UNHCR and WFP, developed and launched the United Nations Partner Portal, an online platform for civil society organizations to create organizational profiles, view opportunities for partnership with the United Nations, and submit both solicited and unsolicited proposals. The portal was designed to provide civil society organizations with a platform to introduce themselves to the United Nations, learn about United Nations partnership processes, view and apply for partnership opportunities and receive feedback.

One year into the operation of the Portal, the benefits are clear. The Portal has allowed more civil society organizations to register and expose their profiles, in turn allowing UNICEF and other United Nations agencies to partner with a broader range of organizations globally to deliver high-quality programmes that benefit children and their families. In 2019, more than 9,000 civil society organizations registered with the United Nations Partner Portal. For half of these organizations, this was the first ever partnership with UNICEF.

During the year, ICTD also took steps to strengthen inter-agency management of the Partner Portal by establishing and operationalizing a governance model – the first of its kind. The governance model includes a forum to make decisions about the strategic

direction of the portal, as well as a platform for agreeing on the harmonization of business processes and streamlining and simplifying the partnership process.

PILLAR 3: TRANSFORMING OUR WORK THROUGH INNOVATION AND TECHNOLOGY

In line with its Strategy, ICTD works to identify technological solutions that address programmatic challenges to producing digital public goods and services. In partnership with field and headquarters programme managers, the Office of Innovation, the regional T4D business analysts and private sector partners, ICTD explores disruptive technologies with the potential to create new programme opportunities. This includes real-time monitoring and predictive analytics, digital identity, artificial intelligence/deep learning, and digital innovations.

INNOVATION AND FRONTIER TECHNOLOGY

ICTD provides oversight, technical assistance and quality assurance in the design and implementation of innovation and frontier technology in countries, while supporting multi-country and inter-agency partnership engagements in various areas, including drones, artificial intelligence and accelerator labs and innovation challenges.

Drones for good

UNICEF has identified drone technology and drone-based services as a way to strengthen and improve its work in global health and community resilience. The organization has developed a drone programme to better understand these opportunities, address key considerations on the use of drones, and craft a practical way forward for UNICEF to globally leverage this technology to protect and advance the rights of children. The programme is exploring a range of applications, including vaccine delivery/transport; improved connectivity in hard-to-reach communities; and aerial imaging for better preparedness and response in emergencies.

For example, ICTD has supported UNICEF Vanuatu in scaling up, in partnership with the Government of Vanuatu, the use of drones to increase the availability of vaccines and

decrease logistics costs. In a global first, the Government of Vanuatu awarded three commercial contracts to two drone companies - Swoop Aero of Australia and Wingcopter of Germany. These companies have designed and implemented logistic procedures for vaccine supply chain by drone, and provided training to local health workers receiving the vaccines at rural facilities. Between January and May, the companies delivered vaccines to more than 1,100 children under 1 year from seven distribution centres to 48 rural health facilities in Vanuatu's Pentecost, Epi, Shepperd and Erromango islands.

EXPANDING SUPPORTER ENGAGEMENT

Every person can contribute to building a world where every child has the right and opportunity to survive and thrive. UNICEF is taking steps to ensure that everyone who wants to support our mission has access to tools and platforms that will make it easy to get involved.

The Supporter Engagement Strategy (SES) initiative aims to expand UNICEF's base of supporters to 100 million people willing to donate, advocate and volunteer. SES was created to inspire individuals to donate their money, voice and time to the cause of children and young people by improving supporter satisfaction and loyalty in markets worldwide, one touch point at a time. The initiative's approach is meant to power-up current efforts to reach, engage and convert individuals into long-lasting partners to help UNICEF reach fundraising, advocacy and engagement objectives and achieve the 2030 Sustainable Development Goals.

A key aspect of the initiative is to leverage state-of-the-art technologies and information to customize and improve experiences at the local level. In 2019, ICTD/UNICEF introduced a new customer relationship management (CRM) fundraising platform using Salesforce technology to provide tailored supporter experiences. ICTD's role was to facilitate the seamless integration of the in-house and external systems and organizational processes to improve efficiency and effectiveness. The team also created automated reports/dashboards to enable more transparent operations with access to real-time supporter information. The platform offers new ways of collecting and storing funding, with better security.

In November 2019, UNICEF officially launched the CRM platform for the first time in the India Country Office. The system has since enabled substantial growth in fundraising. The Country Office has seen an upward trend in donations, with a monthly increase of 1.5 per cent in pledge donors and a 200 per cent increase in one-time donors, and expects an estimated increase of US\$250 million and 500,000 pledge donors over the next two years – much needed resources to support India's programmatic targets for children.

A student learns with the help of a computer tablet provided by UNICEF at a school in Baigai, northern Cameroon.

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MAKING USE OF CRYPTOCURRENCY

In 2019, ICTD helped to drive the establishment of the first UNICEF Cryptocurrency Fund, which will enable UNICEF to receive, hold and disburse donations of cryptocurrencies. In a first for United Nations organizations, UNICEF will use cryptocurrencies to fund open source technology benefiting children and young people around the world. The launch of the UNICEF Cryptocurrency Fund is part of UNICEF's ongoing work with blockchain technology.

PART 4

LESSONS LEARNED AND CONSTRAINTS

As ICTD continues to work towards building a digital UNICEF, there are constraints and important lessons that can be learned when reflecting on the work completed in 2019.

BUILDING A DIGITAL UNICEF

With UNICEF's global workforce our colleagues have different abilities, skills and varying levels of digital dexterity. This variance, particularly in digital skills, amongst UNICEF personnel presents challenges around adoption and ultimately the effectiveness of outputs designed by corporate ICT products and services. As the digital transformation continues to rapidly evolve and change the way we work, personnel can no longer afford to lack the basic, yet essential and critical, skills needed to adopt and use UNICEF's digital solutions to their full potential.

To address this gap, ICTD will continue to invest in user design and adoption efforts to ensure that there is increased uptake and usability of ICT tools and services and will focus on developing systems to support business needs while being intuitive and user friendly.

ICTD will also continue to assess and articulate the return on investment of our corporate ICT systems by utilizing business intelligence to present detailed metrics that identify opportunities and gaps to improve in this area. Continued efforts will also focus on further partnering with internal UNICEF stakeholders to continue to drive and promote digital literacy efforts to ensure our workforce has the requisite skills they need to be efficient and effective in their work.

STRENGTHENING CONNECTIVITY AND ACCESS IN THE FIELD

A large part of ICTD's operational work focuses on supporting offices and colleagues in the field, and ICTD sees varying levels of reliable and affordable connectivity and access

New technology can't be absent in the modern learning environment in the computer lab at RMIT University in HCMC.

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to our standard tools, both in the office and at home. This introduces partial constraints when providing standardized processes and services consistently across the organization. Continued partnership with offices, including the continuation of leveraging specialized vendors, is needed to augment the most constrained local infrastructure and mitigate risks through specialized emergency connectivity and network solutions.

INVESTMENT IN TECHNOLOGY FOR DEVELOPMENT (T4D)

As a growing number of children in the world need assistance, the demand for programmatic support continues to increase putting pressure on already limited resources. As ICTD plays a key role in enabling programmatic initiatives, more resources and scaling up of staff skills, specifically in the area of Technology for Development (T4D), requires additional investment and support.

Additionally, Governments are also increasingly requesting UNICEF technology for development technical assistance as national programming becomes increasingly digital, and enabled by digital innovation. The transformation of ICT staff skills and UNICEF capacity to support ICT-enabled data and information collection and analysis, and sectoral programming in development and emergency contexts, is critical. Seven regional technology for development advisers provided technical assistance and quality assurance support to more than 1,300 initiatives in 2019, and available T4D resources at regional and country levels are lean. With increased capacity, technical and financial resources, UNICEF ICTD will be even better positioned to support the shift to digital programming across the globe, and the delivery of results of children.

Lastly, we are continuing to build an enterprise view of the entire resource model for ICT systems and services which will help to provide increased transparency into ICTD activities and deliverables, making successes and opportunities more visible.

PART 5

ICTD KPI'S AND PERFORMANCE METRICS

The below is a high-level view of the KPI's from the UNICEF Strategic Plan as reported by ICTD included as part of the Integrated Results Framework.

FOSTERING INNOVATIONS IN PROGRAMMING AND ADVOCACY PROCESSES AND PRACTICES

Promoting the use of new technologies to more efficiently and effectively serve children, especially the most disadvantaged (promote the use of technologies).

INDICATORS	BASELINE	2018 VALUE	2019 VALUE	MILESTONE (2019)	TARGET (2021)
Percentage of countries implementing proven real-time information innovations at scale including adaptation for humanitarian response	31%	57%	54%	50%	70%

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VERSATILE, SAFE AND SECURE KNOWLEDGE AND INFORMATION SYSTEMS

Through strengthened information and communications technology (ICT) governance, ICT investments are considered with a strong focus on value for money.

INDICATORS	BASELINE	2018 VALUE	2019 VALUE	MILESTONE (2019)	TARGET (2021)
Percentage of information systems supporting programme effectiveness and innovation efficiency and effectiveness	29%	34%	38%	35%	40%
Percentage of staff have full access to all relevant core UNICEF information systems and are mobile enabled	85.9%	90.3%	100%	90%	100%

Strengthen internal and external collaboration through effective use of technology.

INDICATORS	BASELINE	2018 VALUE	2019 VALUE	MILESTONE (2019)	TARGET (2021)
Internal knowledge platform utility index	0.6	0.6	1.0	0.8	1.0
External engagement index	0.44	0.7	0.9	0.8	1.0

Global presence safeguarded through resilient facilities and systems, and a standard operating environment and connectivity.

INDICATORS	BASELINE	2018 VALUE	2019 VALUE	MILESTONE (2019)	TARGET (2021)
Percentage of average availability of core ICT systems and services across UNICEF (less than five hours of downtime/month)	~100%	~100%	~100%	~100%	~100%

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