

2017

Annual Report

UNICEF Office of Innovation

Part 1: Executive summary

In 2017, the UNICEF Office of Innovation continued to work with partners—and through UNICEF’s network of global problem solvers—to accelerate results for children in a range of contexts by fostering innovation and creating enabling environments for others to innovate for children. This work was carried out using a three-stage approach: 1) identifying new ideas and solutions to help empower communities; 2) working with problem solvers to prototype and test solutions to some of the most pressing problems facing children; and 3) bringing creative and effective solutions to scale to drive change for the children in greatest need.

In line with this approach, in 2017, the Office of Innovation fostered the experimentation and incubation of new solutions by working to shape markets that impact children. This included continued support for the Wearables for Good design challenge winners—Khushi Baby, a necklace that stores immunization records for children in the first two years of life; and SoaPen, a soap crayon that encourages handwashing—both of which are now progressing to scale in India and beyond with partner support. In addition, the finalization of an urbanization use-case handbook and extensive partner-driven research on emerging market opportunities generated key recommendations for using technology to forward UNICEF’s mission in urban areas, and positioned UNICEF as a leader in the field.

The Office of Innovation also contributed to prototyping and testing potential solutions for children to prepare UNICEF to take advantage of technological advances (e.g. drones, open-source software, blockchain etc.) and implement these at scale where they are needed most. During the year, the Venture Fund made 20 new investments that brought the total number of country office projects and start-up companies funded to 51. The drone corridor launched in Malawi in June, for example, will provide a controlled platform for UNICEF and partners to test the safe integration of drone-based solutions for imagery, connectivity and transport. Continued investment in Magic Box in 2017 led to the application of data platforms for school mapping, social indicators, epidemics and information poverty in 10 countries.

A key aspect of this work is scaling technologies and practices that strengthen UNICEF’s work for children. Over the course of the year, the Office of Innovation supported some 90 countries to improve programme results by adapting innovative solutions to challenges in their specific contexts. This included U-Report, a social messaging tool that launched in 10 new countries (40 total) and added more than 1.5 million new users (4.6 million users total); RapidPro, which UNICEF is using to gather real-time information to support its programmes in 51 countries (up from 37 in 2016); and the Internet of Good Things (IoGT) a tool that provides free access to life-saving information in 61 countries, with messages in 13 languages accessed by nearly 11 million users in 2017.

During the year, the Office of Innovation worked through its vast network of partners from both the public and private sectors to coordinate all aspects of its work and support its global team of innovators worldwide. The results achieved over the course of the year would not have been possible without the ideas, expertise, advocacy and financial support of government and development partners, including the Government of the Republic of Korea, in 90 countries; private sector partners including Atlassian, ARM, Facebook, frog design, Johnson & Johnson and Viber; foundations including the Aga Khan Foundation and the Bill and Melinda Gates

Foundation; academic partners Rhodes University Biotechnology Innovation Centre in South Africa, the Massachusetts Institute of Technology and Virginia Polytechnic Institute and State University; and dozens of individual volunteers who donated their expertise and time.

Though there were a range of important achievements in 2017, funding remained a major challenge. Without predictable and flexible resources, the Office of Innovation will remain overly reliant on a few funding streams for the bulk of its future activities. During 2018–2021, the Office will focus on exploring new sources of funding, including with the Private Fundraising and Partnerships and Public Partnerships Divisions to address these issues.

Part 2: Divisional targets and strategies

Identifying new ideas and solutions

The Office of Innovation looks at the two to five year horizon to evaluate emerging and trending technologies to see how UNICEF can work with the private sector to find shared value in this future space - for companies to do better business while improving access to essential services for children.

Wearables for Good

In 2017, the Office of Innovation continued to support the Wearables for Good design challenge winners—Khushi Baby, a necklace that stores immunization records for children in the first two years of life; and SoaPen, a soap crayon that encourages handwashing. This support included facilitating access to funding, development tools and expert mentoring that will help take these inventions from paper to production. Both solutions are now progressing to scale in India and beyond with the help of partners such as UNICEF India, Gavi, the Vaccine Alliance and Johnson & Johnson, as well as local private sector and government partners.

Khushi Baby

Khushi Baby continued to conduct field trials in India during the year with funding support from ARM, and by the end of 2017, had tracked 12,000 mothers across 375 villages, as well as more than 60,000 vaccination events. In addition, 87 front-line nurses and 10 health managers were trained to better serve their communities with the technology; and more than 3,200 mothers were surveyed about their experiences using Khushi Baby. With UNICEF Innovation support, the project secured a US\$500,000 grant from Gavi to continue to bring Khushi Baby to scale across India. In 2017, Khushi Baby was awarded SPO Conference Emerging NGO of the Year 2017 and NFC Forum's Best Mobile App of 2017, and was the Johnson & Johnson Gen H Challenge Grand Prize Winner.

SoaPen

SoaPen continued to demonstrate a sustainable, for-profit social enterprise business model in 2017. The company completed business registrations in the United States and India, and upgraded its formula to be sulphate and EDTA-free and use ingredients approved by Canada, China, the United States and the European Union. In 2017, nearly 10,000 SoaPens were sold, an additional 15,000 additional units were produced for distribution in the United States market

in 2018 and SoaPens were introduced in 30 schools across India. The Roll On Soap formula is now at factory scale with the capacity to produce 800 SoaPens per day locally in India. SoaPen was named to the Forbes 30 under 30 list for health care and science and the SoaPen [Kickstarter campaign](#) raised US\$30,000 and was recognized by the Intuit initiative [#BackedByQuickbooks](#).

Urban innovation

Cities are home to more than half of the global population and generate more than 80 per cent of global gross domestic product. By 2050, more than two thirds of the global population will reside in cities, and 92 per cent of this urban growth will occur in low to middle income countries.^[4] These trends represent a growing need to address emerging challenges and tap into new opportunities, especially as they relate to vulnerable children and youth.¹

In this spirit, in 2017, the Office of Innovation completed work on the urbanization use-case handbook, "[Innovating for Children in an Urbanizing World](#)" which provides UNICEF and partners with a blueprint for designing and implementing technology-based solutions that improve children's lives in rapidly urbanizing areas and support the equity and welfare of young people. This work has also moved UNICEF's Office of Innovation into a leading role in the organization-wide Urban Practice Group, and raised the profile of innovation on the Group's agenda.

To share the insights and findings from the use case handbook, and to gather diverse and relevant feedback on its focus, content and resonance, the Innovation team led internal and external workshops over the course of the year. These included the UNICEF Global Innovation Meeting / Deep Dive Workshop, 'Shifting Towards an Urban World', held in Amman, Jordan, in May 2017, and at the Bill and Melinda Gates Foundation (BMGF) Grand Challenge Meeting, 'Innovating for Children in an Urbanizing World, held in Washington, D.C. in October 2017. Participation in the latter event also put innovation on the agenda of the UNICEF-BMGF partnership.

Market research

Emerging technology solutions have tremendous potential to deliver social impact for women and children across a range of UNICEF priority sectors, from access to basic services to emergency response. The Office of Innovation has therefore sought to capture the most promising use cases in emerging markets and the business rationale for technology actors to enable these through targeted market research.

Building on the directive of the urbanization use-case handbook, the UNICEF Office of Innovation in partnership with ARM, alongside Dalberg Advisors and Dalberg's Design Impact Group, conducted immersive user-level research and market analysis in Jakarta, Nairobi and Mexico City to identify the most exciting opportunity areas for technology actors to reach the urban poor in emerging markets across the globe, profitably and at scale. An advisory council

¹ United Nations Children's Fund, 'Draft Global Urban Strategic Framework', (zero draft), UNICEF, 18 October 2016, <<https://unicef.sharepoint.com/teams/Communities/Urban/Documents/Draft%20Global%20Urban%20Strategic%20Framework,%20Zero%20Draft,%202020%20Oct%202016.pdf>>, accessed 30 January 2018.

comprised of leading technology actors such as Facebook, Google and Microsoft was also engaged to validate findings and recommendations.

The research findings, which will be disseminated in 2018, illustrate specific market opportunities for developing key technologies; offer insights into the types of technologies that will improve outcomes for children and women living in rapidly urbanizing environments; identify market opportunities for businesses to create and tailor these technologies in ways that support UNICEF's mission; and connect technology actors and UNICEF country offices with resources and partnerships to bring these solutions to life. Six high potential opportunities include blended learning, multi-modal skilling, smart recruiting for informal economy workers, smart metering for water, emergency response systems and commuter ride sharing.²

Shortfalls

Although the Office of Innovation Futures team established a strong relationship with the East Asia and the Pacific Regional Office in 2017 through collaboration on the urbanization handbook, it struggled to liaise with other regional offices on urbanization work, including navigating the point of contact for urban work. Funding also remained a persistent challenge, with difficulties adding/diversifying funding streams and resources for futures work, and heavy reliance on ARM for most futures activities. The Innovation-Futures team also did not meet its goals for communication and recognition opportunities related to the ARM partnership activities, and did not mobilize UUK resources/partnerships to that end.

Prototyping and testing

The Office of Innovation also invests in early stage solutions that show great potential to positively impact children in the one to two year future.

The UNICEF Venture Fund

The UNICEF Venture Fund is a US\$14.4 million investment fund that makes early stage investments in technologies for children developed by UNICEF country offices or companies in UNICEF programme countries. The Fund allows UNICEF to quickly assess, fund and grow open-source technology solutions that show potential to positively impact the lives of vulnerable children. The goal is to identify clusters of initiatives around frontier technology areas, allowing UNICEF to take small risks within particular technology portfolios, and ensure that even if many

²Definitions of the high potential opportunities are as follows: **Blended learning:** Platforms which allow teachers to integrate online games and content into lessons in classrooms, with the aim of enhancing primary or secondary education, by better engaging children and teaching them new skills; **Multi-modal skilling:** Services that mix online education with in-person mentoring to expand access to the skills (and certificates or qualifications) that people need to get better jobs, and often directly link learners to employers; **Smart recruiting for the informal economy:** Platforms which connect individuals and employers with workers in the informal economy for one-off or short-term jobs, using matching algorithms to recommend the most suitable candidates for customers and providing additional protection and security for workers; **Emergency services:** Platforms that link people to the full range of public and private emergency response services through one interface, matching people in urgent need with the closest and best equipped vehicles and mapping their routes to-and-from the incident; **Water metering:** IoT networks of sensors and meters, purchased by municipal water companies, to monitor the flow and/or quality of water through the network to identify leakages and aggregate water revenues, ultimately improving access to clean, fairly-priced water; **Commuter ride-sharing:** Car pooling services offered to worker by employers to ensure that they get to work safely, to reduce their impact on the environment, and to reduce the time wasted travelling to work.

of the investments fail, the portfolio is a success. Ultimately, promising technologies will be used to develop scalable platforms that UNICEF can use in a range of applications and country settings.

In 2017, the UNICEF Venture Fund grew with additional contributions from Finland (EUR 1.5 million) and Denmark (DKK 10 million), as well as additional continuous financial support from Denmark for the period 2018-2021. The Fund made 11 new investments in projects led by UNICEF country offices during the year, bringing the total number of country offices funded to 37; and nine new investments in start-up companies, bringing the total number of companies funded to 14. These start-up companies are exploring innovative applications using a range of technologies, including drones, blockchain, virtual reality, augmented and alternative communications, artificial intelligence and mobile tech.

For example, in South Africa, the Fund invested in Trustlab, which has used blockchain to digitize 50,000 attendance records for more than 50 early childhood development centres. This will allow education authorities in South Africa to match attendance to government subsidies and thereby ensure that school-aged children can access the educational services that they are entitled to receive.

The Trustlab project is the Fund's first exploration of blockchain, and the experience has led to priority setting within UNICEF for further blockchain work, including exploring smart contracts to improve internal efficiency; piloting blockchain in UNICEF programmes; and increasing resources for UNICEF through cryptocurrencies. For example, in November, UNICEF Kazakhstan held the organization's first-ever blockchain hackathon. The hackathon brought together 200 young people to develop blockchain-based solutions to creating smart contracts, which have the potential to improve the transparency and efficiency of UNICEF's operations.

In addition, four calls for applications were launched to startups in 2017—in open source technology in general, augmented and alternative communications technologies, augmented reality/virtual reality and data science. These cohorts are working on similar underlying technology stacks and are collaborating across individual products to build platforms that can more easily be brought to scale.

The Fund also invests in early-stage research into new technologies to benefit children, as well as in specific assets and infrastructure that may be needed to add value to the individual seed fund investments, such as the first humanitarian drone corridor opened in Malawi in 2017 (see below). This work supports investment strategies and decisions and provides new engagement opportunities for partners. All research and learning are published in the public domain.

Drone testing corridors

Unmanned aerial vehicles, or 'drone'-based technologies and services have the potential to strengthen and accelerate the work of UNICEF and its partners in a number of areas. The Office of Innovation has established a drones programme to better understand these opportunities, address key considerations in 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.

In June, the Office of Innovation, in collaboration with the Government of Malawi and the Civil Aviation Authority, launched a 40-km radius drone test corridor in central Malawi. The corridor is the first in Africa and one of the first globally that focuses on humanitarian and development use. It provides a controlled platform for UNICEF and partners to test the safe integration of transport, connectivity and imaging solutions, including how these solutions can support service delivery that will benefit communities. Between June and December, seven companies applied to use the corridor and some 150 flights were conducted. UNICEF also partnered with the University of Virginia to train 30 Malawian university students who 3D printed and flew 17 flights during two weeks of training.

In Vanuatu, UNICEF and the Government formalized an agreement in 2017 to test drones for transport in 2018. Testing will focus on using drones to reduce the time it takes to deliver vaccines and medical supplies to remote communities. This marks the first time that a dedicated challenge for cold chain transport is underway in the Pacific Region, and presents a unique opportunity for the industry to test and develop the full logistics of rolling out unmanned transport.

In the Central Asia sub-region, UNICEF and the Government agreed to establish a drone corridor that will focus on humanitarian applications of drone technologies and services.

Data science and artificial intelligence

The Venture Fund is investing in Magic Box, a collaborative platform that is made possible through the contributions of private sector partners such as Telefonica, Google, IBM and Amadeus, who share their data and expertise for public good. By harnessing real-time data generated by the private sector, UNICEF can gain critical insights into the needs of vulnerable populations, and make more informed decisions about how to invest its resources to respond to disasters, epidemics (e.g. the [Zika outbreak](#)) and other challenges. This represents an entirely new way of working in emergencies for UNICEF.

In 2017, the Office of Innovation grew the Magic Box portfolio by exploring four applications in 10 countries spanning five regions: 1) **information poverty**: measuring and quantifying gaps and inequities in a child's access to information using qualitative research, new data sources and machine learning; 2) **fighting epidemics**: estimating the risk of disease spread using network analysis and identifying mobility patterns from various sources (e.g. mobile data, social media, flight data, etc.); 3) **school mapping**: mapping schools and measuring their connectivity in real time using high resolution satellite imagery, deep learning techniques and crowdsourcing; and 4) **social indicators**: generating real-time information on social and economic inequality using satellite imagery, artificial intelligence and human activity patterns from mobile operators.

In an example of how Magic Box can be used to fight epidemics, in May 2017, the Office of Innovation developed a computational model to simulate the spread of Ebola in the Democratic Republic of the Congo and the Central African Republic. This analysis led to a partnership between UNICEF Democratic Republic of the Congo and local telecommunications companies

Airtel and Vodacom to provide real-time data on human movement. Access to this data will enhance the reliability of future simulations and in so doing, help prevent future disease outbreaks.

In 2017, the Office of Innovation also mobilized partners to map schools in Brazil, Colombia, Liberia, Malawi and Mauritania, and determine the connectivity status of schools in Brazil, Colombia and Mauritania. The data will ultimately be used to improve the delivery of information, food and medical supplies to schools in these countries, and give UNICEF and governments a better understanding of teachers' and students' needs.

In Iraq, the Office of Innovation and the Iraq Country Office partnered with Zain, a mobile telecommunications company, to develop methods for estimating poverty indicators using data from mobile network operators. This allowed the Government and the National Institute of Statistics to bridge information gaps and construct dynamic measures that can be continuously updated.

Shortfalls

Fostering greater diversity in the portfolio of early-stage investments will require a shift in the approach to sourcing startups. In the second half of 2017, the Venture Fund shifted to targeted calls for applications in certain tech areas, which generated far more focused submissions and helped to bring companies on board that are working on related solutions. There is also a recognition that greater gender balance and equity are essential in Venture Fund investments, not only to achieve UNICEF's mission but also to enable strong product outcomes. Yet among the 14 startups invested in to date, only two have female co-founders. In 2018, the Venture Fund will focus on building partnerships that reflect a more gender-balanced portfolio.

Scaling technologies and practices

The Office of Innovation identifies proven solutions with the potential to be implemented at national scale in multiple countries. In 2017, the Office supported some 90 countries to improve programme results by adapting innovations to their specific contexts, in collaboration with private sector partners, governments, universities and communities.

Youth engagement and empowerment

U-Report

U-Report is a free social messaging tool that allows users to speak out on development issues, support child rights and improve communities. In 2017, U-Report was launched in 10 new countries and added more than 1.5 million new users (a 48 per cent increase from 2016). There are now over 4.6 million U-Reporters active in 40 countries. The significant demand-based growth of U-Report and its contribution to UNICEF's work in emergencies at scale with the Office of Emergency Programmes and country offices, including preparedness, response and accountability to affected populations, are among the outstanding achievements of the year.

During the response to Hurricane Irma in the Caribbean, for example, U-Report was rapidly deployed [to deliver potentially life-saving messages](#) to more than 25,000 people within the first

14 days of the response. In addition, [volunteers personally responded to 8,000 messages](#) using U-Report. These applications of U-Report in the Hurricane Irma response went on to support communities affected by hurricanes Harvey and Maria. Follow up surveys showed that U-Report was the only source of preparedness information for more than a third of its users, more than 80 per cent of U-Reporters shared the information with at least one person, 51 per cent shared the information with at least five people.

U-Report was also used to support UNICEF response to disease outbreaks in Nigeria (cholera), Latin America (Zika) and Uganda (Marburg); landslides in Sierra Leone; and conflict in the Central African Republic. In several countries, U-Report also contributed to closing the gender gap. For example, 500,000 messages answered in U-Report provided information on menstrual hygiene management and sexual and reproductive health.

UPSHIFT

UPSHIFT is a social innovation youth programme that enables marginalized young people to gain skills for employment and life. Building on private sector best practices (human-centred design), UPSHIFT enables young people to identify problems in their communities and create entrepreneurial solutions to address them. The programme combines social innovation workshops with mentorship and seed funding. The core UPSHIFT content is modular, allowing UPSHIFT to be adapted to different contexts and delivered in different settings, from youth innovation labs to non-formal education centres

During the second half of the year, the Office of Innovation focused on preparing and packaging UPSHIFT for scale, culminating in a workshop in Kosovo in November 2017. The workshop brought together participants from 22 different countries to share lessons learned to date and plan for the future deployment of UPSHIFT across UNICEF in over 20 countries during 2018-2019 (resources pending).

Real-time information

Access to credible and up-to-date information about the situation of children is essential to improving their lives and protecting their rights. UNICEF and partners use RapidPro to gather accurate and timely data on vital areas such as health, nutrition, education and child protection—even in remote and hard-to-reach places—and use that data to reach those most in need. The technology allows users to design, pilot and scale direct mobile outreach services without the help of a software developer.

In 2017, the number of UNICEF countries using RapidPro increased from 37 to 51, including in 18 countries where digital solutions powered by RapidPro supported UNICEF health programming. For example, in Indonesia, RapidPro provided real-time tracking and troubleshooting for [the country's largest-ever measles and rubella vaccination campaign](#), reaching more than 35 million children between the ages of 9 months and 15 years. In Sierra Leone, RapidPro supported the National Malaria Control Program to prepare and monitor the distribution of long-lasting insecticide-treated nets to 1.5 million households. In Senegal, mInfoSante powered by RapidPro, which was developed independently by health workers, has been used to coordinate emergency medical transportation more than 50 times, connect

ambulance services to healthcare providers and alert the medical community to referrals in real time.

Recognizing the value of real-time information for programme monitoring, in 2017, the Office of Innovation, Information and Communication Technology (ICT) Division, Programme Division, Field Results Group and Office of Evaluation launched a dedicated RapidPro Scale-Up Initiative. By year's end, the Initiative had approved eight³ country office proposals to plan, test and scale-up real-time monitoring systems using RapidPro technology in areas including social protection, maternal health, early childhood development and water, sanitation and hygiene (WASH). The aim is to facilitate timely course correction during programme implementation; improve the ability of national monitoring systems to deliver results for children; and identify best practices for mainstreaming innovative tools in UNICEF country programmes. An additional 10 countries will be identified in 2018 to participate in Phase II of this project.

The Office of Innovation also helped to mainstream support for the technical deployment of the RapidPro platform as part of a process of global ICT transformation across UNICEF. This included recruiting new ICT positions, creating an internal learning curriculum and deployment resources and delivering a multi-month capacity building programme to equip business analysts in all seven regions with the knowledge and skills they need to excel as they take on these functions in 2018.

The RapidPro platform was selected and highlighted in UNDP's annual Global South-South Development Expo as a model for cooperation by developers across the global South to build and expand a software platform for public global good. RapidPro will also be highlighted in UNICEF's *South-South Collaboration Compendium* to be released in early 2018.

Access to information and quality learning

The loGT platform provides free access to life-saving and life-improving information to the most disadvantaged and often first-time users of all web-enabled mobile phones—from the most basic devices to smart phones. The Office of Innovation works closely with partners to carry out this work.

The growth of loGT has been impressive: between 2015 and the end of 2017, the number of countries covered increased from three to 61. During the year, 11 million users—60 per cent of whom were between the ages of 13 and 24—accessed messages in 13 languages. In South Africa alone, [more than 1 million users accessed loGT](#) in 2017 to learn how to better support the development of their infants. A survey conducted among these users showed positive results, with 82 per cent reporting that they learned from the loGT site; 80 per cent feeling more confident about the information on the site; and nearly 50 per cent demonstrating behaviour change.

Shortfalls

³ The RapidPro Scale Up Initiative targets 11 countries. Eight of these received notification that their proposals were funded in 2017; the remaining three are in various stages of review.

Efforts to bring innovations to scale across UNICEF face the same major hurdle: funding. Without predictable and flexible funding to support scale, the Office of Innovation must rely on project-based, small-scale funding, which can hinder progress. For example, core staff positions that lead key portfolios are part-time or only funded a few months at a time. This is ultimately more expensive, inefficient and misses the opportunity to accelerate progress towards the Sustainable Development Goals (SDGs). Going forward, the Office of Innovation-Scale team will explore new funding solutions, identify opportunities for creating shared value with the private sector around innovative financing options best suited to fund scale in a new Accelerate to Scale Fund, and work with the Venture Fund on a more integrated funding pipeline.

Partnerships

In 2017, the Office of Innovation worked through its vast network of partners from both the public and private sectors to coordinate all aspects of its work and support its global team of innovators worldwide. The results achieved over the course of the year would not have been possible without the ideas, expertise, advocacy and financial support of government and development partners, including the Government of the Republic of Korea, in 90 countries; private sector partners including Atlassian, ARM, Facebook, frog design, Johnson & Johnson and Viber; foundations including the Aga Khan Foundation and the Bill and Melinda Gates Foundation; academic partners Rhodes University Biotechnology Innovation Centre in South Africa, the Massachusetts Institute of Technology and Virginia Polytechnic Institute and State University; and dozens of individual volunteers who donated their expertise and time.

The Office of Innovation's collaboration with Rhodes University Biotechnology Innovation Centre in South Africa generated important results in point of care diagnostics. In 2017, students using the Centre's maker space developed FieldLab, a solar-powered lab-in-a-box that takes molecular biology to remote locations at a tenth of the cost of traditional mobile labs. FieldLab won two innovation awards in 2017, along with funding to bring the solution to market.

A key corporate partnership in 2017 was with ARM, a global semiconductor and software design company whose technology is in more than 95 percent of smartphones. The partnership, which began in 2015, involves a unique combination of multi-year financial investment (approximately US\$3.7 million over three years) to support: scaling country- and multi-country level projects in the UNICEF Office of Innovation portfolio; joint research into emerging market possibilities that will impact ARM's future directions; high-profile joint communication; and employee engagement/expertise sharing to support UNICEF Innovation programming. The partnership with ARM financially supported the urban innovation and wearables for good work in 2017 and the scale up of RapidPro, and has given UNICEF Innovation access to a network of private sector companies doing business for social good.

During the year, the Office of Innovation also explored new ways of engaging with partners. The opening of the new drone corridor in Malawi represented a new way of providing value to corporate partners and others through a testing and data sharing space in a new context. Magic Box has also opened up an entirely new way of engaging with corporate partners, such as Telefonica, Google, IBM and Amadeus, which are now sharing a core business asset (data) with UNICEF for the first time. Partners also contributed expertise to UNICEF platforms during

the year, for example Google on Magic Box and the University of California San Diego on machine learning for school mapping.

Monitoring, evaluation and learning

The Office of Innovation develops monitoring and learning frameworks for innovations going to scale based on the Lean Data⁴ approach, with a theory of change, log frame and indicator matrix that can be adapted to specific country contexts. In 2017, two countries fully implemented these—Ukraine for U-Report and South Africa for loGT— and captured important insights and results regarding what users accessed, learned and did differently as a result of having this information. In addition, joint working papers developed with the Innocenti Research Centre in 2017 will provide global guidance on ethical considerations for using social network services and geospatial technologies for evidence generation.

In addition, each investment that the Office of Innovation makes through the Venture Fund provides data on progress against project milestones on an automated and real-time basis. The data are presented publicly through an interactive website, allowing for the exploration of individual projects and tracking of investments at the portfolio and overall Fund levels. This allows the Office of Innovation, companies and country offices to track progress in real-time, review challenges and assess assistance needs on an ongoing basis, facilitating fast iteration based on lessons learned over time.

The way forward

UNICEF is on the ground in 190 countries, and confronts the evolving challenges that children and young people are facing, from disease outbreaks and population movement, to urbanization and climate change. The organization pairs these changing realities on the ground with efficient, effective and creative ways of addressing them. Our ability to meet the SDGs requires ongoing innovation to shape these global efforts and implement cutting-edge solutions.

Moving forward, the UNICEF Office of Innovation will continue to convene and collaborate with partners to leverage emerging technologies and approaches that can improve children's lives. In the coming year, the Office of Innovation will continue to form partnerships around frontier technologies, such as drones and unmanned aerial vehicles, 21st century skills, urban technologies and new banking tools, that exist at the intersection of US\$100 billion business markets and 1 billion person needs and identify how these can be grown and scaled profitably and inclusively.

⁴ Lean Data is about collecting meaningful data in a low-cost, flexible and time-efficient way. We make full use of the technology available to us through RapidPro polls, online surveys, Facebook Insights and Google Analytics to collect this data, mostly in real-time and in a user-centred way.

Part 3: Evaluations and research

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